

Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2611

CD CDV LD AUTOCHANGER

LC-V200

LC-V100

LC-V200 AND LC-V100 HAVE THE FOLLOWING:

Type	Model		Power Requirement	Remarks
	LC-V200	LC-V100		
KUC	○	—	AC120V only	
SEM	—	○	AC110V, 120V, 220 – 230V, 240V (Switchable)	

- This manual is applicable to the following : LC-V200/KUC; LC-V100/SEM.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

CONTENTS

1. SAFETY INFORMATION	2
2. MAIN BOARDS AND PARTS ARRANGEMENT DIAGRAMS	4
3. REMOVAL	6
4. EXPLODED VIEWS, PACKING AND PARTS LIST	12
5. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS	51
6. PCB PARTS LIST	169
7. ADJUSTMENTS	178
7. REGLAGES	185
7. AJUSTES	192
8. BLOCK DIAGRAMS	199
9. TEST MODE	207
10. IC INFORMATION	233
11. PANEL FACILITIES	245
12. SPECIFICATIONS	248

PIONEER ELECTRONIC CORPORATION

4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan

PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.

PIONEER ELECTRONICS OF CANADA, INC. 300 Allstate Parkway Markham, Ontario L3R 0P2 Canada

PIONEER ELECTRONIC [EUROPE] N.V. Herengracht 1, 9120 Mellebeke, Belgium

PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: (03) 580-9911

© PIONEER ELECTRONIC CORPORATION 1992

SI SEPT. 1992 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.



NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

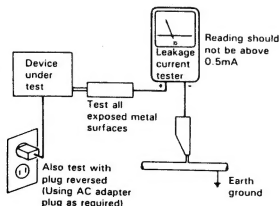
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

Service Manual

 **PIONEER®**
The Art of Entertainment

ORDER NO.
RRV1616

CD CDV LD AUTOCHANGER

LC-V100

● Refer to the service manual ARP2611 for LC-V100/SEM.

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	The voltage can be converted by the following method.
	LC-V100		
SEM8	○	AC110V/120V/220-230V/240V	With the voltage selector

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U. S. A.
PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 501 Orchard Road, #10-00 Lane Crawford Place, Singapore 0923
© PIONEER ELECTRONIC CORPORATION 1996

T-SZE-MAY-1996 Printed in Japan

CONTRAST OF MISCELLANEOUS PARTS

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊕" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

■ CONTRAST OF LC-V100/SEM8 AND LC-V100/SEM

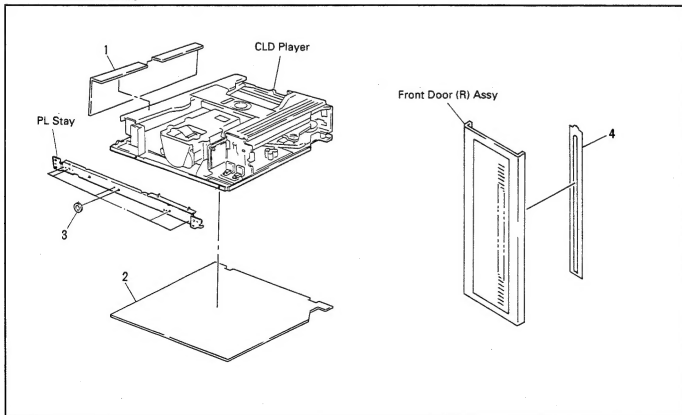
LC-V100/SEM8 and LC-V100/SEM have the same construction except for the following:

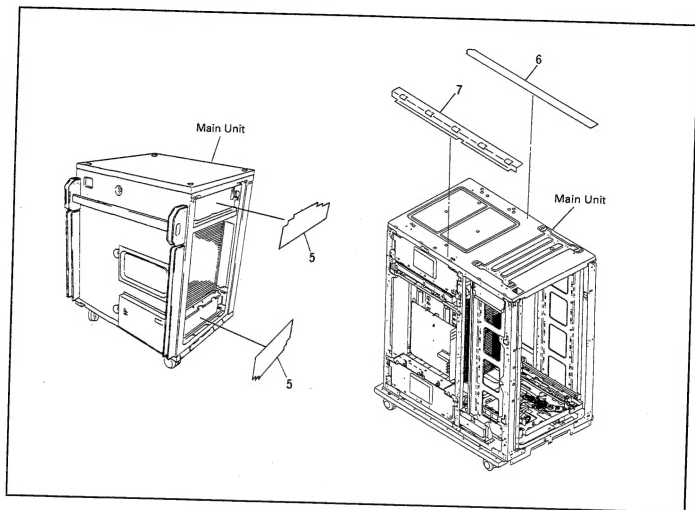
Mark	Symbol & Description	Part No.		Remarks
		LC-V100/SEM	LC-V100/SEM8	
NSP	Gasket	Not used	DEB1323	
	Shield Sheet A	Not used	DEC1959	*1 No. 1
	PL Insulation Sheet	Not used	DEC1960	*1 No. 2
	Shield Sheet C	Not used	DEC1961	*1 No. 6
	Shield Sheet D	Not used	DEC1962	*1 No. 7
	Shield Sheet E	Not used	DEC1963	*1 No. 5
	Shield Sheet F	Not used	DEC1971	*1 No. 4
	PL Stay	RNE1547	DNH2149	
	PL Lock Holder	RNE1549	DNH2150	
	Ferrite Clamp	Not used	DTH1175	
NSP	CE Mark Label	Not used	RRW1222	
NSP	Ferrite Clamp	Not used	RTH1003	
	Fiber Washer	Not used	VEC1450	*1 No. 3

*1 : The numbers in the remarks column correspond to the numbers on the exploded diagram.

Refer to "EXPLODED VIEWS".

● EXPLODED VIEWS





P.S

1. CIOB unit (RWG1010) is made a design change like the following:

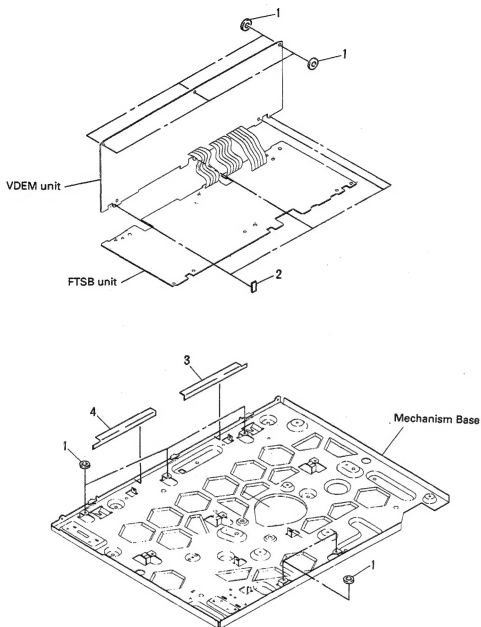
Mark	Symbol & Description	Part No.		Remarks
		OLD	NEW	
△	L201-L206	Not used	VTH1020	

2. CLD player unit (RXX1546) is made a design change like the following:

Mark	Symbol & Description	Part No.		Remarks
		OLD	NEW	
	Fiber Washer	Not used	VEC1450	*1 No. 1
	Spacer (A)	Not used	DEC1968	*1 No. 2
	Spacer (B)	Not used	DEC1969	*1 No. 3
	Spacer (C)	Not used	DEC1970	*1 No. 4

*1: The numbers in the remarks column correspond to the numbers on the exploded diagram.
Refer to "EXPLODED VIEWS (CLD PLAYER SECTION)".

● EXPLODED VIEWS (CLD PLAYER SECTION)



(FOR EUROPEAN MODEL ONLY)

VARO!

AVATTAESSA JA SUOJALUKITUS
OHITETTAESSA OLET ALTTIINA
NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.
ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:

USYNLIG LASERSTRÅLNING VED ÅBNING
NÄR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION. UNDGÅ UDSÆTTELSE FOR
STRÅLING.

VARNING!

OSYNLIG LASERSTRÅLNING NÄR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN
ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.



LASER
Kuva 1
Lasersäteilyn
varoituserkki

WARNING!

DEVICE INCLUDES LASER DIODE WHICH
EMITS INVISIBLE INFRARED RADIATION
WHICH IS DANGEROUS TO EYES. THERE IS
A WARNING SIGN ACCORDING TO PICTURE
1 INSIDE THE DEVICE CLOSE TO THE LASER
DIODE.



LASER
Picture 1
Warning sign for
laser radiation

IMPORTANT

THIS PIONEER APPARATUS CONTAINS
LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS
SHOULD BE DONE BY A SPECIALLY
INSTRUCTED PERSON.

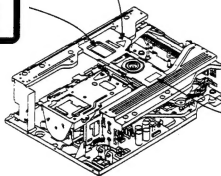
LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK

ADVARSEL
UDEVISIG LASERSTRÅLNING VED ÅBNING
NÄR SIKKERHEDSAFBRYDERE ER UDE AF
FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSICHTBARE LASERSTRÅLUNG
TRITZ AUS, WENN SICHERHEITSKLAPPE
FÜR GEÖFFNET IST! NICHT DEN STRAHLEN
AUSSETZEN!

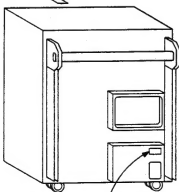
VRW 1004



VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTA-
ESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE
LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL
ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
BETRÄKTA EJ STRÅLEN.

PHE223

FRONT



CLASS 1
LASER PRODUCT

VRW-328

Additional Laser Caution

1. The ON/OFF statuses of the side-A/B detection switch (TURN switch on the MECHANISM assembly), slider-position detection switches (PARK 1, 2 and 3 on the MECHANISM assembly) and loading-status detection switches (SW 1, 2 and 3 on MSWB assembly) are detected by the microprocessor (IC751 in the FTSB unit). To permit the laser diode to oscillate, it is required to set the side-A/B detection switch for side A (IC751 in the FTSB unit, pin 47 XTURN A=L and pin 48 XTURN B=H) or the slider-position detection switch for the LD ACTIVE status (PARK 1: OFF, PARK 2: OFF, PARK 3: OFF), and to set the loading-status detection switch for clamped state (SW 1: OFF, SW 2: ON, SW 3: ON). As long as these requirements are not satisfied, the laser diode will not oscillate. When the requirements are met in any way, the laser diode can oscillate. The laser diode oscillation will continue if the collector and the base of Q822 in the FTSB unit are shorted to each other (fault condition). In test mode (See page 207), the laser diode oscillates when the microprocessor detects a PLAY signal, with the above requirements satisfied.
2. When drawn out from the unit, close viewing through the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

2. MAIN BOARDS AND PARTS ARRANGEMENT DIAGRAMS

2.1 MAIN PARTS ARRANGEMENT DIAGRAM

Note : When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS".

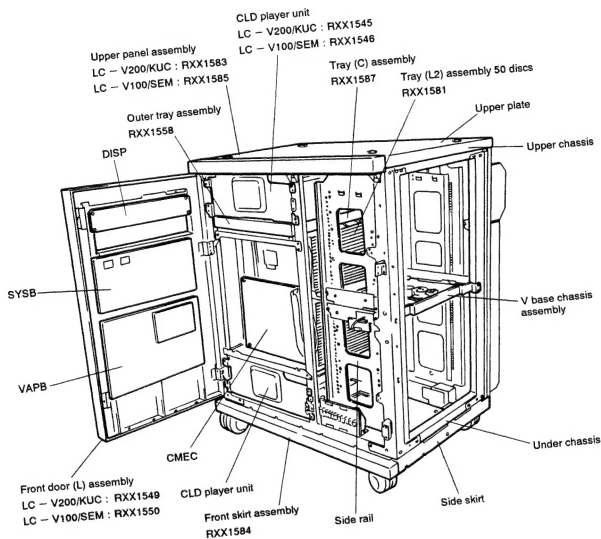


Fig. 1-1.

2.2 MAIN BOARDS ARRANGEMENT DIAGRAM

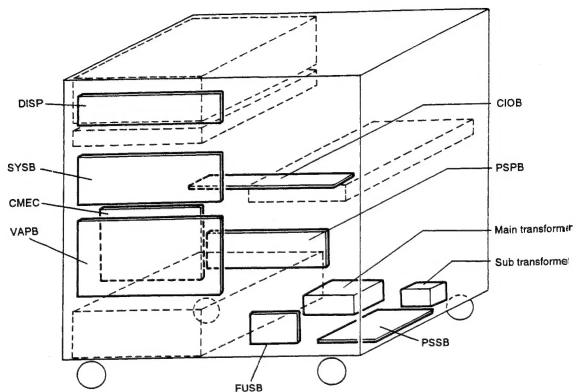


Fig. 1-2.

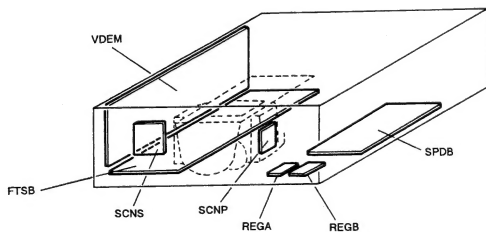
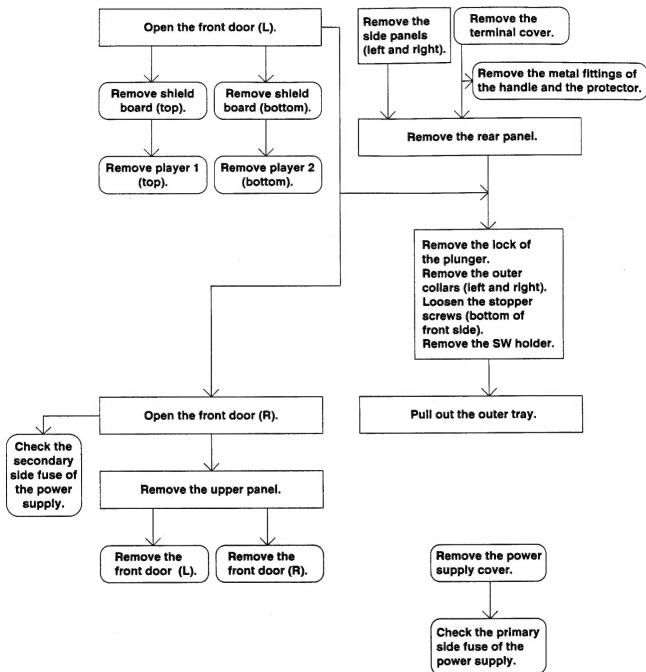


Fig. 1-3.

3. REMOVAL

3.1 OUTLINE OF REMOVAL PROCEDURE



3.2 OPENING OF FRONT DOOR (L)

- 1) Insert a hexagonal wrench (4 mm across) into the two holes on the front door (L) and loosen the screws inside.

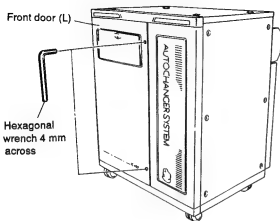


Fig. 1

- 2) Open the ceiling door. If it is locked, unlock it with the key (a 3 mm across hexagonal wrench can be used as the key).

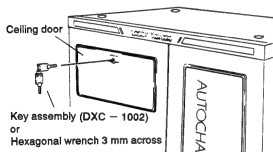


Fig. 2

- 3) Hold the top right of the ceiling panel and while lifting the door (L) up, open it towards you.

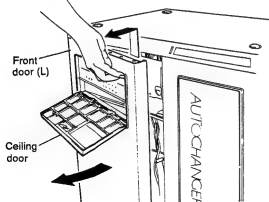


Fig. 3

3.3. REMOVAL OF PLAYER

- 1) Open the front door (L).
- 2) Remove the screws at the Δ marks on the shield board.
Upper player: 7 screws
Lower player: 8 screws

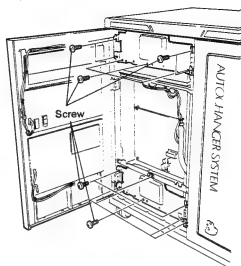


Fig. 4

- 3) Remove the two screws at the Δ marks of the PL stay.
- 4) Disconnect the connector connected to the relay board of the player from the unit.

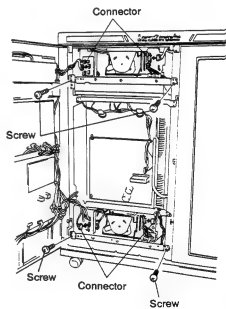
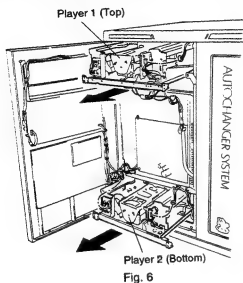


Fig. 5

5) Pull out the player towards you.

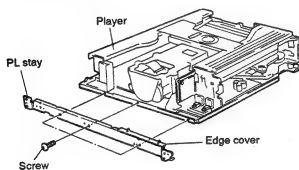
At this time, make sure that the connector pulled out does not get caught.

Also, when drawing out the upper player, be careful not to scratch the name plate of the plus - one tray (standard tray).



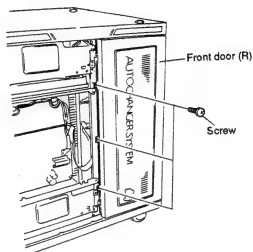
6) Remove the three screws and PL stay from the player.

Note : As the PL stay of the bottom player has an edge cover, mount it correctly.



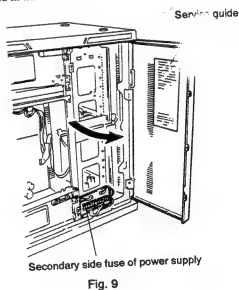
3.4 OPENING OF FRONT DOOR (R) (CHECKING SECONDARY SIDE FUSE OF POWER SUPPLY)

- 1) Open the front door (L).
- 2) Remove the three screws.



3) Open it towards you.

Note : Use the service guide (quick reference to error codes, etc.) attached on the inside of the front door (R). The secondary side fuse of the power supply can also be checked in this condition.



3.5 REMOVING OF SIDE PANEL

Remove the six screws on the left and right respectively with a hexagonal wrench (3 mm across), and remove the side panel.

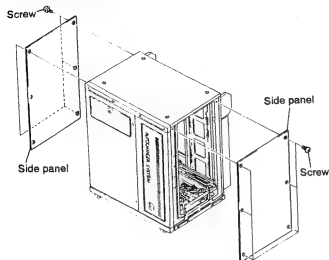


Fig. 10

3.6 REMOVAL OF REAR PANEL

- 1) Remove the twelve screws (black) securing the metal fittings of the handle and the protector and remove these metal fittings, handle pipe and protector.

Note : As these parts are heavy, be careful not to drop them on you.

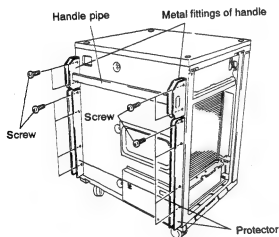


Fig. 11

- 2) Remove the six screws holding the terminal cover and open it. Pull out the connector, open the cord holder and remove the terminal cover.

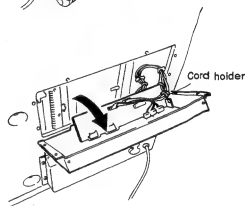
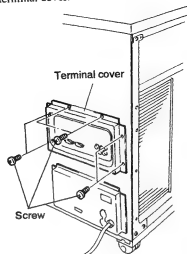


Fig. 12

- 3) Remove the three screws at the center and remove the rear panel.

Note : Be careful not to bend the hook for temporary securing.

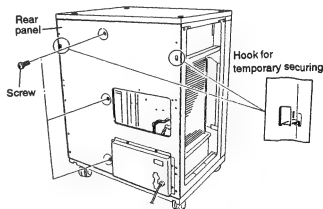


Fig. 13

3.7 REMOVAL OF UPPER PANEL

With the front doors (L), (R) open, remove the three screws securing the upper panel.

The upper panel can be removed by lifting it up.

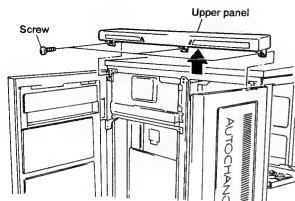


Fig. 14

3.8 REMOVAL OF FRONT DOORS (L), (R)

With the upper panel removed, the doors can be opened by opening them about 90 deg and lifting them up.

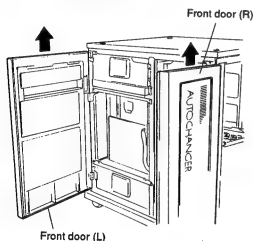


Fig. 15

3.9 CHECKING THE PRIMARY SIDE FUSE OF THE POWER SUPPLY

1) Remove the six screws of the power supply cover.

2) Remove the power supply cover.

* Four claws of the power supply cover (two at the bottom and one at each side) are inserted in the rear panel.

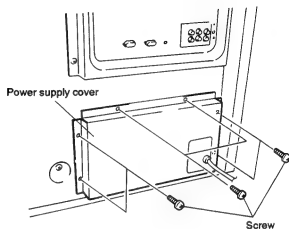


Fig.16

3) The primary side fuse of the power supply can be checked and replaced in this condition.

4) When removing the board, also remove the AC cord holder and the four screws at the top and bottom.

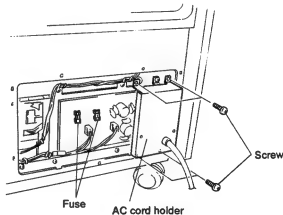


Fig.17

3.10 DRAWING OUT THE OUTER TRAY

When the outer tray does not open even if the power has been supplied, open it as follows.

- 1) Remove the rear panel.
- 2) While pressing the plunger in the direction of arrow ④ push the outer tray in the direction of arrow ⑤. (The tray at the front will be pushed out slightly in this condition.)
- 3) Pull out the tray from the front.

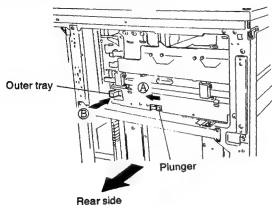


Fig. 18

3.11 REMOVAL OF TRAY (L2)

- 1) Remove the ten screws ① and ② and remove the park stopper plate in the directions of arrows ③ and ④.

Note : Use a magnetic driver, etc. so that the screws do not drop inside the unit.

- 2) Remove the tray (L2) in the direction of arrow ⑤.

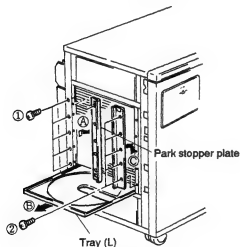


Fig. 19

3.12 CHECKING THE CLD PLAYER

- 1) Remove the player from the unit as shown in the figure below and place it on the unit.
- 2) The unit can be operated by removing the relay boards SCNS and SCNP from the player and connecting the connector from the unit.

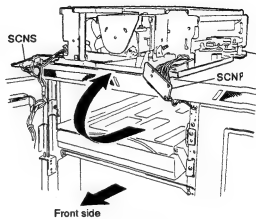


Fig. 20

- 3) Remove the two screws ① and open the board (VDEM unit).
- 4) Remove the three screws ② and remove the wiring stopper binding the cables.
- 5) Pull out the two boards (VDEM, FTBS).

Note : When returning the two boards to their original positions after checking, secure the cables, etc. properly. Also fold the three flat cables between VDEM and FTBS into the product properly.

(To prevent the tray from being hit.)

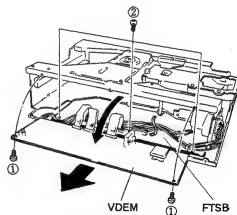


Fig. 21

4. EXPLODED VIEWS, PACKING AND PARTS LIST

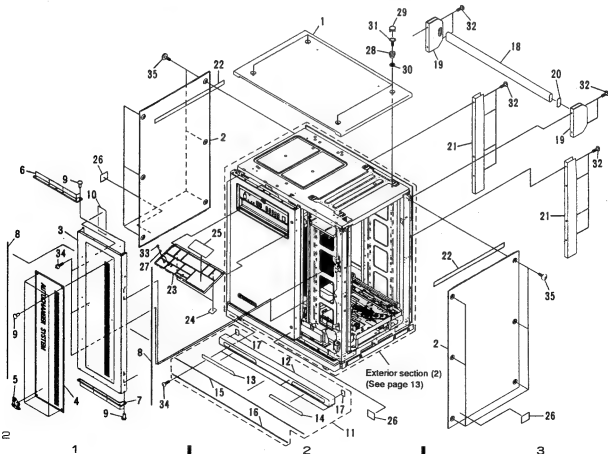
NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- Screws adjacent to ▼ mark on the product are used for disassembly.

4.1 EXTERIOR SECTION (1)

Parts List

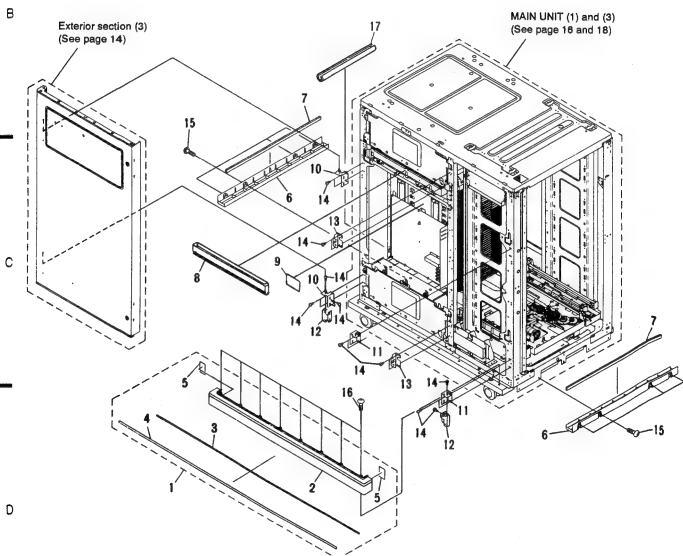
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Top plate	RMM1005	NSP	16	Packing seal (E)	REB1208
	2	Side panel	RNA1590	NSP	17	Damp sheet	VEX1021
	3	Front door (R) assembly	RXA1494	NSP	18	Handle pipe	RLA1178
	4	Graphic plate	RAH2091	NSP	19	Metal fittings of handle	RNE1574
	5	Karaoke-bird seal	RAX1005	NSP	20	Cushion	DEB1016
	6	Door mold (RT)	RAP1016	NSP	21	Protector	RNE1577
	7	Door mold (RU)	RAP1017	NSP	22	Packing seal (B)	REB1203
	8	Packing seal (D)	REB1205		23	Sealing door	RNK1842
	9	Rivet (plastic)	RBM-003		24	Plate	REC1179
	10	Service guide	RRW1107		25	Guide label	RRW1117
	11	Upper panel assembly (KUC type)	RXX1583	NSP	26	Caution label (KUC type)	VRW-235
		Upper panel assembly (SEM type)	RXX1585	NSP	27	Door lens	RNK1838
NSP	12	Upper panel	RNT1169	NSP	28	Holder A	DMA-105
	13	Mirror seal (L) (KUC type)	RAX1003	NSP	29	Holder B	DMA-106
		Gray seal (L) (SEM type)	RAX1007		30	Washer	DNH-104
	14	Mirror seal (R) (KUC type)	RAX1004		31	Screw	BMZ80P140FMC
		Gray seal (R) (SEM type)	RAX1008		32	Screw	AMZ80P100FZK
	15	Silver tape (2.5)	RAX1006		33	Screw	BBZ20P060FZK
					34	Screw	BBZ30P080FMC
					35	Screw	RBA1107



4.2 EXTERIOR SECTION (2)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Front skirt assembly	RXX1584	NSP	11	Door hinge (R) assembly	RXA1496
NSP	2	Front skirt	RNT1170	NSP	12	Hinge reinforced plate	RNE1542
NSP	3	Packing seal (E)	REB1208	NSP	13	Door holder assembly	RXA1497
	4	Silver tape (6.5)	RAX1002		14	Screw	BBZ30P080F MC
NSP	5	Damp sheet	VEX1021		15	Screw	BBZ40P080F ZK
	6	Side skirt	RNK1840		16	Screw	BMZ40P350F ZK
	7	Packing seal (A)	REB1202	NSP	17	Protect tube	REC1181
	8	Tray name plate	RNK1841				
NSP	9	Label	VRW-348				
NSP	10	Door hinge (L) assembly	RXA1495				

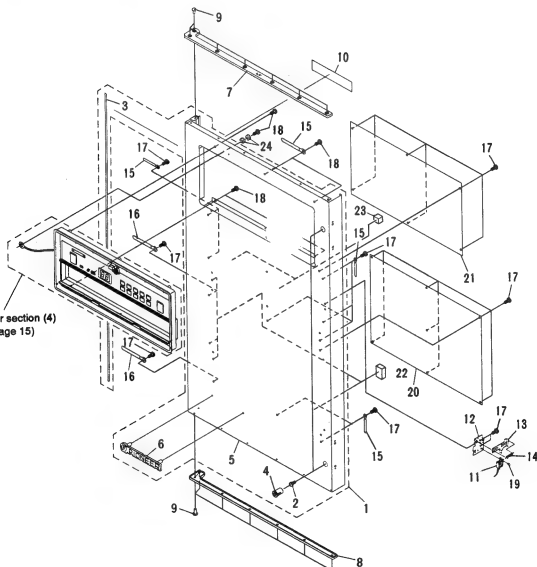


4.3 EXTERIOR SECTION (3)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Front door (L) assembly (KUC type)	RXX1549	NSP	11	Lever switch	DSK1003
		Front door (L) assembly (SEM type)	RXX1550		12	Door switch holder	RNE1550
	2	Screw	RBA1103		13	Door switch arm	RNE1551
	3	Packing seal (D)	REB1205		14	Door switch spring	RBH1327
	4	Hole escutcheon	RNK1839		15	Cord clamber	RNH-184
NSP	5	Front door (L) assembly (KUC type)	RXA1493	NSP	16	Cord clamber	DNF1128
NSP		Front door (L) assembly (SEM type)	RXA1507		17	Screw	BEZ30P080FMC
					18	Screw	BP22P080FMC
					19	Screw	BMZ30P080FMC
					20	VAPB unit (KUC type)	RWG1006
NSP	6	Badge	SAM-451	○		VAPB unit (SEM type)	RWG1007
	7	Door mold (LT)	RAP1014	○	21	SYSB unit	RWZ2769
	8	Door mold (LU)	RAP1015	NSP	22	Rubber spacer (A)	REB1057
	9	Door mold (plastic)	RBM-003	NSP	23	Rubber spacer	REB1124
	10	Door label (KUC type)	ORW1069		24	Washer	WB30FMC

Exterior section (4)
(See page 15)



4.4 EXTERIOR SECTION (4)

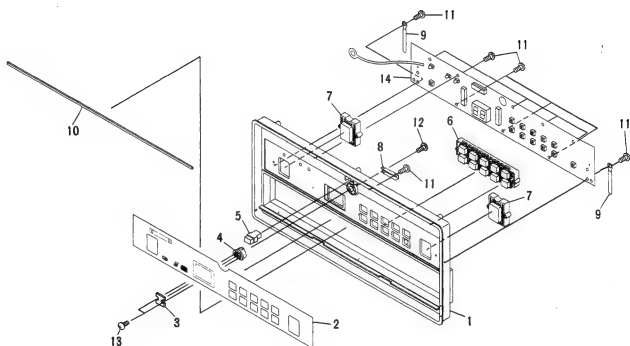
Parts List

Mark	No.	Description	Part No.
A	1	Operation panel	RNT1144
	2	Operation plate	RAH2093
	3	Door lock plate	RNE1564
	4	Door lock holder	RNK1852
	5	Latch	DXA1356
	6	Ten key	RAC1723
	7	One key	RAC1724
	8	Door lock spring	RBK1047
	9	Cord clumper	RNH - 184
	10	Door packing	REB1206
C	11	Screw	BPZ30P080FCU
	12	Screw	IPZ30P080FMC
	13	Screw	BBZ20P060FZK
	14	DISP unit	RWZ2770

B

C

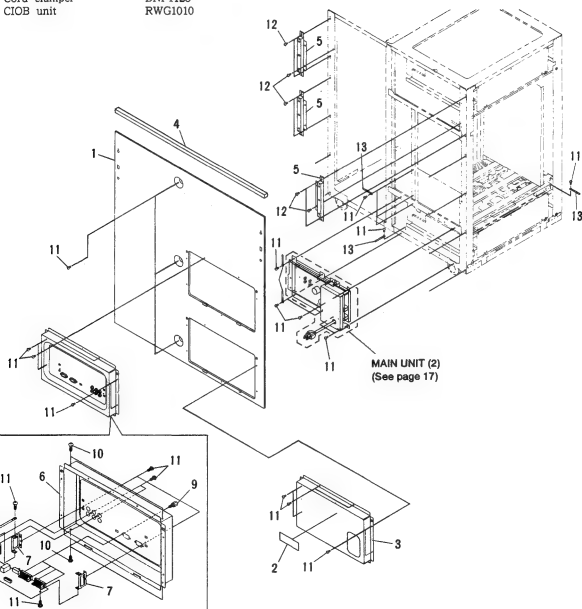
D



4.5 MAIN UNIT (1)

Parts List

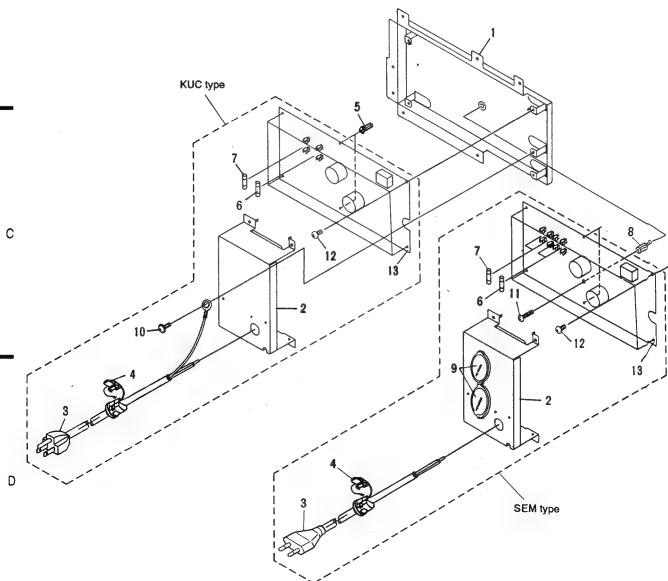
Mark	No.	Description	Part No.
NSP	1	Rear panel	RNA1591
NSP	2	Caution label (F) (SEM type)	VRW-328
NSP	3	Power cover (KUC type)	RNA1594
NSP		Powerr cover (SEM type)	RNA1608
NSP	4	Packing seal (C)	REB1204
NSP	5	Rear support	RNE1533
NSP	6	Terminal cover	RNA1593
NSP	7	PCB holder	VNE1741
	8	Cord clamper	RNH-184
	9	Joint bolt	DBA1038
	10	Screw	BBZ30P060FZK
	11	Screw	BBZ30P080FMC
	12	Screw	BBZ40P080FZK
	13	Cord clamper	DNF1128
	14	CIOB unit	RWG1010



4.6 MAIN UNIT (2)

Parts List

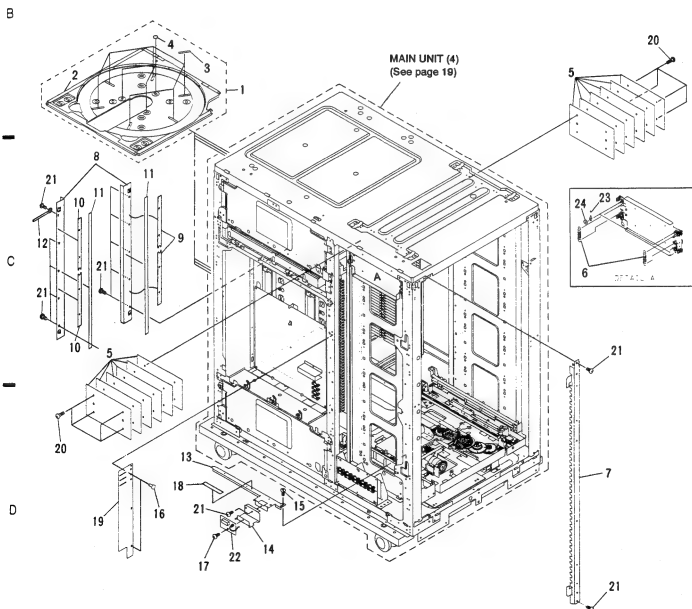
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	NSP	1 AC board holder	RNE1534	Δ	6	FU101 (500mA) Fuse (KUC type)	REC - 077
	NSP	2 AC cord holder (KUC type)	RNA1592	Δ		FU101, 102 (T160mA) Fuse (SEM type)	REK - 092
	NSP	AC cord holder (SEM type)	RNA1607	Δ	7	FU103 (1.6A) Fuse (KUC type)	REK - 074
		3 Power cord with plug (KUC type)	DDG1025	Δ		FU103, 104 (T500mA) Fuse (SEM type)	REK - 097
		Power cord with plug (SEM type)	RDG1021		8	Screw grommet (SEM type)	DEC1013
	4	AC cord stopper (KUC type)	VEC - 201		9	Voltage selector (SEM type)	AKX - 507
		Strain relief (SEM type)	CM - 22B		10	Screw	PMB40P08FMC
	NSP	5 PCB support	VEC1266		11	Screw	BP230P250FMC
					12	Screw	BB230P080FMC
				NSP	13	PSPB unit (KUC type)	RW22754
				NSP		PSPB unit (SEM type)	RW22773



4.7 MAIN UNIT (3)

Parts List

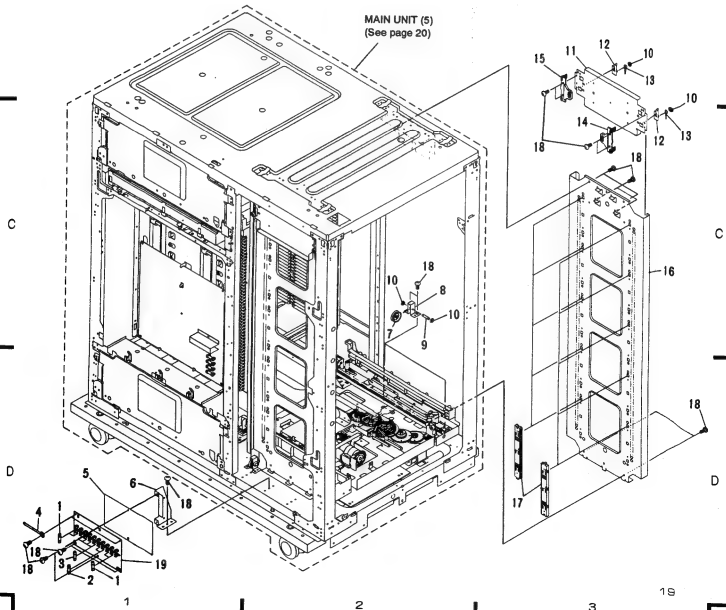
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Tray (L2) assembly	RXX1581		16	Rivet (plastic)	VEC1178
NSP	2	Tray (L2)	RNK1853		17	Rivet (plastic)	RBM - 003
	3	Disc pad	REC1190	NSP	18	Caution label	RWW1115
	4	LD pad	VEC1472	NSP	19	Cable slit	REC1129
NSP	5	Balance weight	VNE1692		20	Screw	BBZ30P140FMC
	6	Wire spring	VBH1171		21	Screw	BBZ30P080FMC
NSP	7	Encode angle	VNE1689	⊙	22	INDB unit	RWZ2764
NSP	8	Park stopper plate	RNE1521		23	Wire assembly (C)	RXA1498
NSP	9	Park spacer	REC1140		24	Washer	WT26D047D050
	10	Park spacer (F)	REC1177				
NSP	11	Park cushion (B)	REB1211				
	12	Cord clumper	RNH - 184				
NSP	13	Front arm	VNE1720				
NSP	14	Indicator bracket	RNE1554				
	15	Rivet (plastic)	RBM - 003				



4.8 MAIN UNIT (4)

Parts List

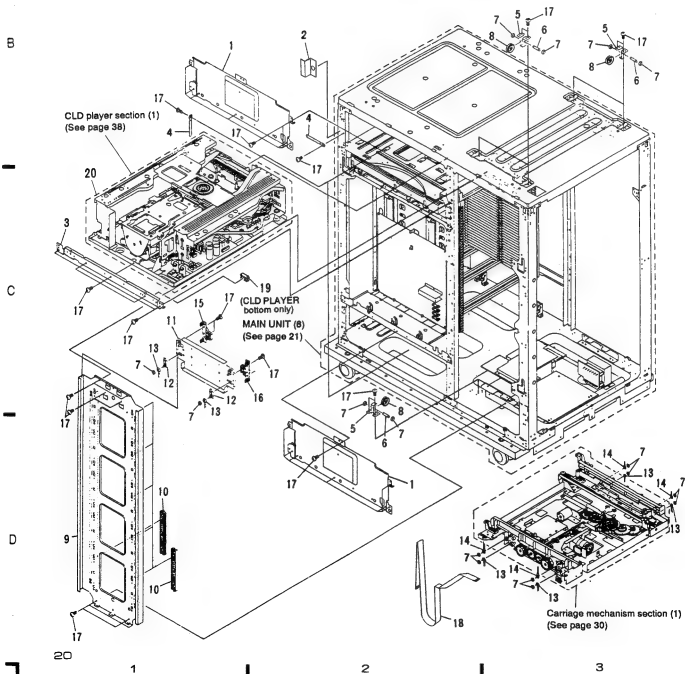
	Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	
A	Δ	1	FU105, 106, 109, 110 (1.6A) Fuse (KUC type)	REK - 074	NSP	11	Weight holder assembly	VXA1714	A
	Δ		FU105, 106, 109, 110 (T1.6A) Fuse (SEM type)	REK - 102	NSP	12	Wire hook assembly	VXA1715	
	Δ	2	FU107, 108 (500mA) Fuse (KUC type)	REK - 077		13	Wire assembly (B)	VXA1717	
	Δ		FU107, 108 (T500mA) Fuse (SEM type)	REK - 097	NSP	14	Balancer guide (L)	VNL1429	
	Δ	3	FU111 - 114 (3.15A) Fuse (KUC type)	REK - 083		15	Balancer guide (R)	VNL1430	
	Δ		FU111 - 114 (T3.15A) Fuse (SEM type)	REK - 105	NSP	16	Side rail	VNE1686	
		4	Cord clamper	RNH - 184		17	Rack plate	VNL1427	
	NSP	5	Fuse cover	REC1167		18	Screw	BBZ30P080FMC	
					NSP	19	FUSB unit (KUC type)	RWZ2779	
					NSP		FUSB unit (SEM type)	RWZ2778	
B		6	Fuse board holder	RNE1529					
		7	Wire pulley	VNL1428					
	NSP	8	Pulley holder	VNE1688					
	NSP	9	Wire pulley shaft	VLL1412					
		10	Washer	WT26D047D050					



4.9 MAIN UNIT (5)

Parts List

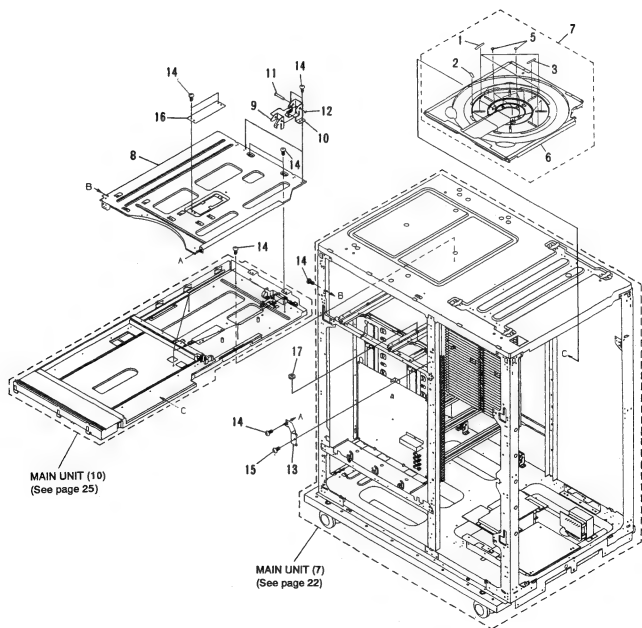
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	Shield plate	RNE1544	NSP	11	Weight holder assembly	VXA1714
NSP	2	Edge cover	REC1173	NSP	12	Wire hook assembly	VXA1715
NSP	3	PL stay	RNE1547		13	Wire assembly (B)	VXA1717
	4	Cord clamber	RNH - 184		14	Wire assembly (C)	RXA1488
NSP	5	Pulley holder	VNE1688		15	Balancer guide (L)	VNL1429
NSP	6	Wire pulley shaft	VLL1412		16	Balancer guide (R)	VNL1430
	7	Washer	WT26D047D050		17	Screw	BBZ30P080FMC
	8	Wire pulley	VNL1428		18	Lead card (17P)	VDA1383
NSP	9	Side rail	VNE1686	NSP	19	Edging (B)	REC1099
	10	Rack plate	VNL1427			(CLD PLAYER bottom only)	
				⊙	20	CLD player unit	RXX1545
				⊙		(KUC type)	
						CLD player unit	RXX1546
						(SEM type)	



4.10 MAIN UNIT (6)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Disc pad (L)	VEC1191	NSP	11	PL lock shaft	RLA1181
	2	Disc pad (B)	VEC1379		12	E ring	YE25FUC
	3	Disc pad (C)	VEC1380	NSP	13	Mechanism support	RNE1546
	4	.....			14	Screw	BBZ30P06FZK
	5	Rubber sheet (D)	VEB1131		15	Screw	BBZ30P08FMC
NSP	6	Tray (C)	RNK1821	NSP	16	DSNB unit	RWZ2433
	7	Tray (C) assembly	RXX1587		17	Fiber washer	RBF1045
NSP	8	PL mount holder	RNE1545				
NSP	9	PL lock arm	RNE1548				
NSP	10	PL lock holder	RNE1549				



4.11 MAIN UNIT (7)

Parts List

Mark	No.	Description	Part No.
△	1	FU115 (2.5A) Fuse (KUC type)	REK - 082
△		FU115 (T1.6A) Fuse (SEM type)	REK - 102
△	2	FU116, 117 (2.5A) Fuse (KUC type)	REK - 082
△		FU116, 117 (T1.6A) Fuse (SEM type)	REK - 102
NSP	3	Cord clammer	RNH - 184
NSP	4	Front stay	VNE1701
NSP	5	Rear stay (U)	VNE1702
NSP	6	Rear stay (L)	VNE1703
NSP	7	Support stay (U)	VNE1706
NSP	8	Support stay (L)	RNE1525
NSP	9	Protect sheet	REC1152
	10	Rivet (plastic)	RBM - 003

Mark	No.	Description	Part No.
NSP	11	Front stay (L)	RNE1532
	12	Rivet (plastic)	VEC - 179
NSP	13	Wire clip	REC1155
NSP	14	Edge guard (B)	DEC1144
	15	Screw	BBZ30P080FMC
⊙	16	CMEC unit (KUC type)	RWG1008
⊙		CMEC unit (SEM type)	RWG1009
NSP	17	Protect sheet (B)	REC1183
	18	Cord clammer	DNF1128

B

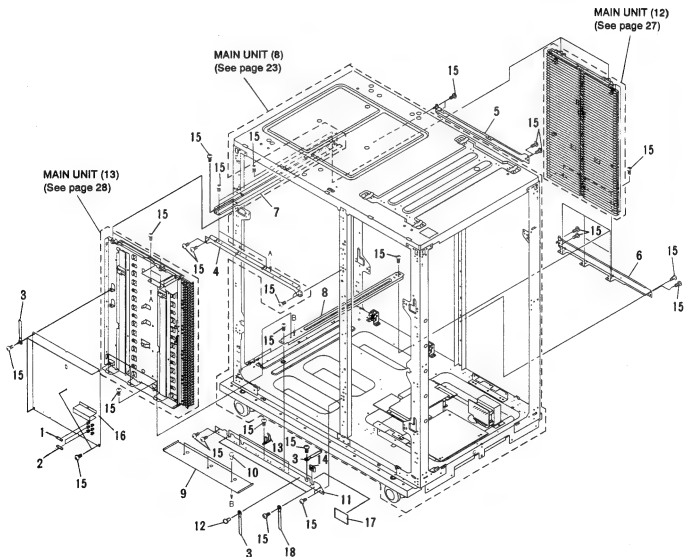
B

C

C

D

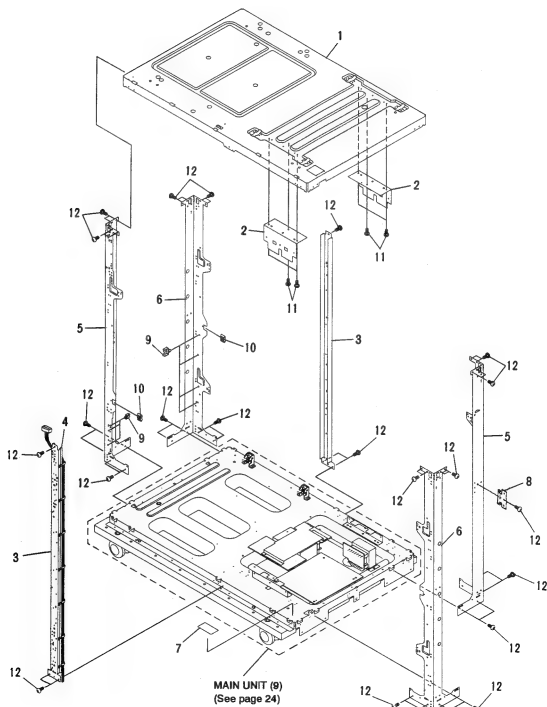
D



4.12 MAIN UNIT (8)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	NSP	1 Upper chassis	RNB1078	NSP	6	Corner angle (B)	RNE1531
	NSP	2 Upper bracket	RNE1526	NSP	7	Fuse caution label (KUC type)	RRW-111
	NSP	3 Center angle	VNE1700	NSP	8	Stopper plate	RNE1575
	NSP	4 Edging (F)	REC1176	NSP	9	Wire clip (B)	VEC1381
	NSP	5 Corrier angle (A)	RNE1530	NSP	10	Edge guard (B)	DEC1144
				11	Screw	BBZ30P060FZK	
				12	Screw	BBZ30P060FMC	



4.13 MAIN UNIT (9)

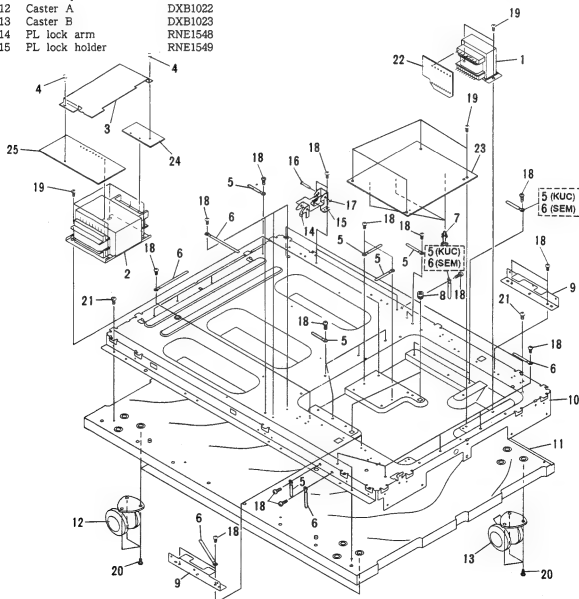
Parts List

Mark	No.	Description	Part No.
------	-----	-------------	----------

A	△	1	T101 SUB transformer (KUC type)	RTT1210
	△		T101 SUB transformer (SEM type)	RTT1212
	△	2	T102 MAIN transformer (KUC type)	RTT1209
	△		T102 MAIN transformer (SEM type)	RTT1211
NSP		3	Transformer sheet	REC1157
		4	Rivet (plastic)	RBM - 003
		5	Cord clasper	RNH - 184
NSP		6	Cord clasper	DNF1128
NSP		7	Card spacer	REC1156
NSP		8	PCB support	REC1105
NSP		9	Side rail bracket	VNE1687
NSP		10	Under chassis assembly	RXA1492
B	NSP	11	Bottom plate	RMM1003
		12	Caster A	DXB1022
		13	Caster B	DXB1023
NSP		14	PL lock arm	RNE1548
NSP		15	PL lock holder	RNE1549

Mark	No.	Description	Part No.
------	-----	-------------	----------

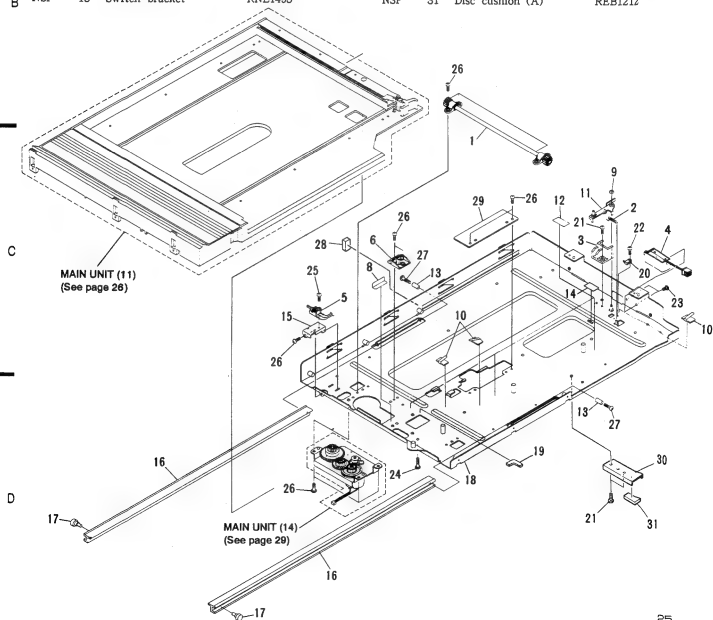
NSP		16	PL lock shaft	RLA1181
		17	E ring	YE25FUC
		18	Screw	BBZ30P080FMC
		19	Screw	BBZ40P080FZK
		20	Screw	PMA60P250FMC
		21	Screw	RFA1105
NSP		22	SBTB unit (KUC type)	RWZ2756
NSP		18	SBTB unit (SEM type)	RWZ2775
○		23	PSSB unit (KUC type)	RWZ2755
○			PSSB unit (SEM type)	RWZ2774
NSP		24	MTPB unit (KUC type)	RWZ2757
NSP			MTPB unit (SEM type)	RWZ2776
		25	MTSB unit (KUC type)	RWZ2758
			MTSB unit (SEM type)	RWZ2777



4.14 MAIN UNIT (10)

Parts List

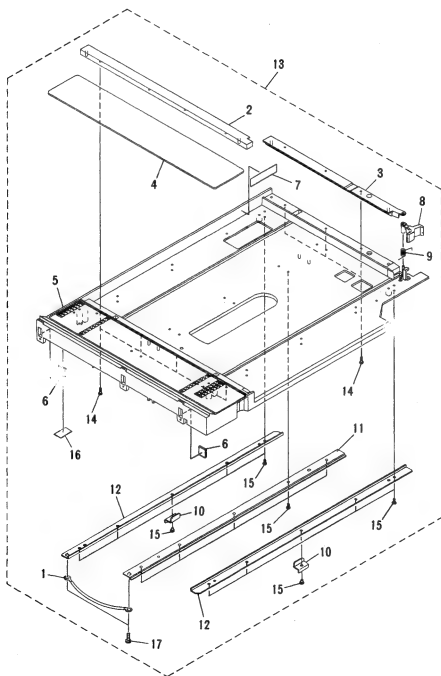
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Outer synchro gear assembly	VXA1726	NSP	16	Slide rail	RNG1063
	2	Lock spring	RBH1310	NSP	17	Rail pin	RLA1175
	3	Outer stopper	VNL1474	NSP	18	Outer base assembly	RXA1523
	4	Solenoid	RXP1018		19	Edge guard	DEC1317
	5	Lever switch	DSK1003		20	Slide switch	VSK1006
	6	Outer guide	RNK1797		21	Screw	BBZ30P060FMC
	7	.....			22	Screw	PMZ20P060FMC
	8	Gear cover (C)	REC1132		23	Screw	BMZ26P030FMC
	9	Washer	WT21D040D050		24	Screw	BCZ30P120FMC
	10	Cord keep	DNH1285		25	Screw	BBZ26P060FMC
NSP	11	Outer lock arm assembly	RXA1522		26	Screw	BBZ30P060FZK
NSP	12	Mechanism sheet	VEX1024	NSP	27	Screw	PMZ30P120FMC
NSP	13	Outer collar	RLP1046	NSP	28	Outer cushion (B)	REC1124
NSP	14	Outer spacer	REC1175	NSP	29	DSNA unit	RWZ2432
B	15	Switch bracket	RNE1495	NSP	30	Disc guard (A)	RNE1578
				NSP	31	Disc cushion (A)	REB1212



4.15 MAIN UNIT (11)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	NSP	1 Earth lead unit	XDF-504	NSP	11	Guide plate (A)	RNE1494
	2	Tray cover (F)	RNL1002	NSP	12	Guide plate (P)	VNE1744
	3	Tray cover (R)	RNL1003		13	Outer tray assembly	RXX1558
	4	Tray caution plate	RAH2105		14	Screw	BBZ30P080FMC
	NSP	5 Outer tray	VNK1883		15	Screw	BPZ30P060FCU
NSP	6	Outer cushion (C)	REB1196		16	Mechanism sheet	VEX1024
NSP	7	Outer cushion (D)	REB1210		17	Screw	BBZ30P080FZK
	8	Outer stopper (R)	VNL1478				
	9	Stopper spring (R)	RBH1308				
NSP	10	Rail stopper	RNE1505				



4.16 MAIN UNIT (12)

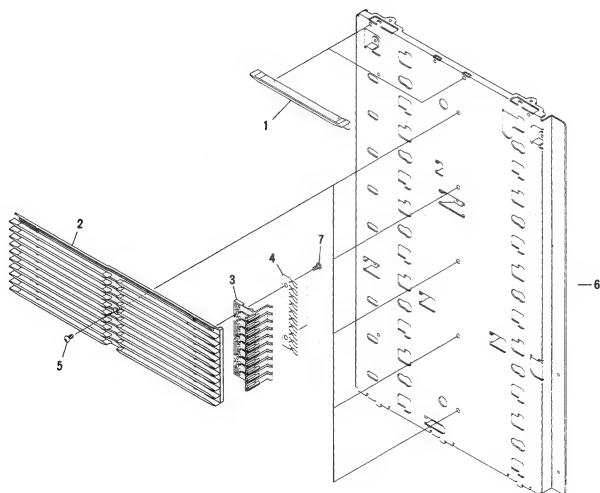
Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Park top guide	RNK1752	NSP	6	Side plate (R) assembly	RXA1457
	2	Park guide	VNL1418		7	Screw	BBZ30P080FMC
	3	Park stopper (R)	VNL1473				
	4	Park stopper spring	RBK1041				
	5	.....				

B

C

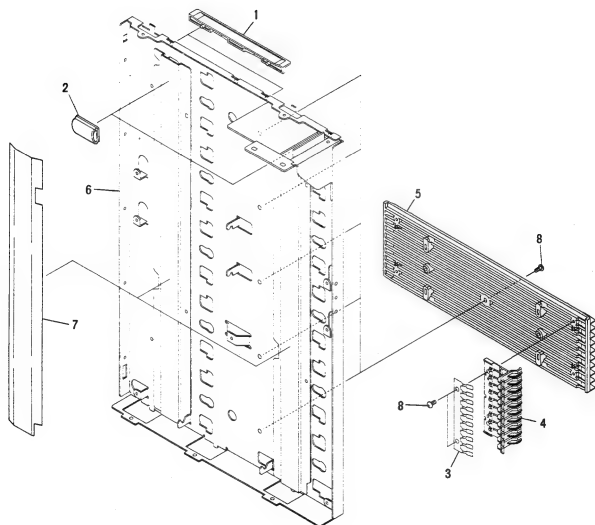
D



4.17 MAIN UNIT (13)

Parts List

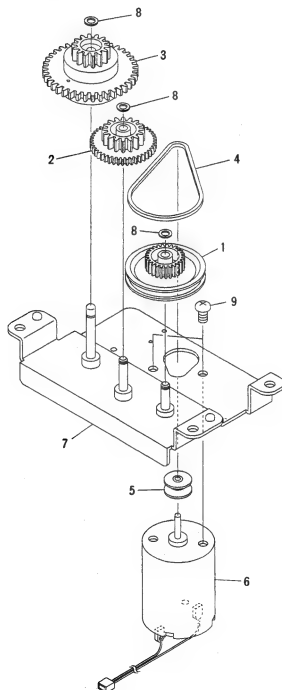
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Park top guide	RNK1752	NSP	6	Side plate (F) assembly	RXA1473
	2	Shell clip	DEC1184	NSP	7	Insulation sheet (B)	REC1121
	3	Park stopper spring	RBK1041		8	Screw	BEZ30P080PMC
	4	Park stopper (F)	VNL1472				
	5	Park guide	VNL1418				



4.18 MAIN UNIT (14)

Parts List

Mark	No.	Description	Part No.
A	1	Outer gear (A)	VNL1475
	2	Outer gear (B)	VNL1476
	3	Outer gear (C)	VNL1477
	4	Belt	PEB1138
	5	Motor pulley	PNW1643
NSP	6	Loading motor	VXM1048
	7	Outer gear plate assembly	RXA1471
	8	Washer	WT26D047D50
	9	Screw	PMZ30P030FMC



4.19 CARRIAGE MECHANISM SECTION (1)

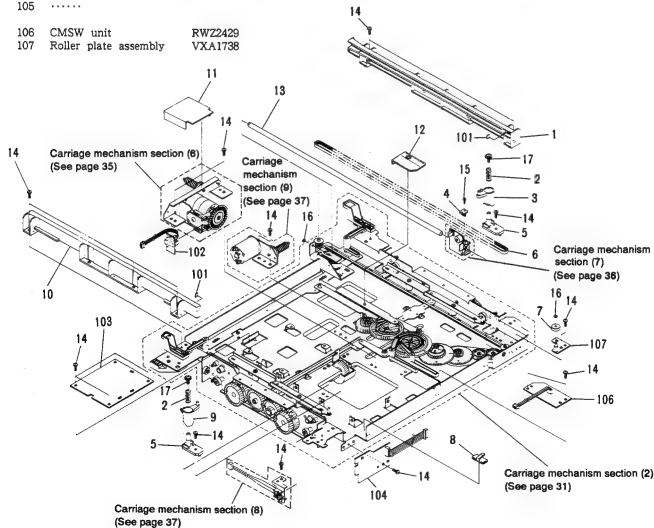
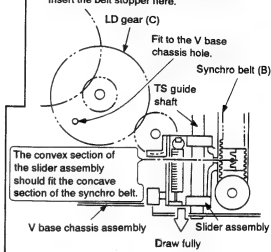
Parts List

Mark	No.	Description	Part No.
1	1	Tray guide (R)	VNL1432
2	2	Pull arm spring	VBH1174
3	3	Pull arm (R)	VNL1468
4	4	Belt stopper	VNL1459
5	5	Pull arm base	VNL1466
6	6	Synchro belt (B)	VEB1171
7	7	Belt roller	RLP1045
8	8	Cord keep	REF1001
9	9	Pull arm (F)	VNL1467
10	10	Tray guide (F)	VNL1431
11	11	Gear cover (A)	REC1130
12	12	Gear cover (B)	REC1192
13	13	TS guide shaft	RLA1168
14	14	Screw	BBZ30P080FMC
15	15	Screw	BBZ30P060FZK
16	16	Washer	WT26D047D050
17	17	Screw	IBZ30P080FMC
NSP	101	Tray guide cushion	REC1117
⊙	102	VMFG unit	RWZ2431
⊙	103	CNNB unit	RWZ2427
⊙	104	ENCB unit	RWZ2430
105	105	.....
⊙	106	CMSW unit	RWZ2429
NSP	107	Roller plate assembly	VXA1738

Attaching the Belt Stopper

Attach the belt stopper as follows.

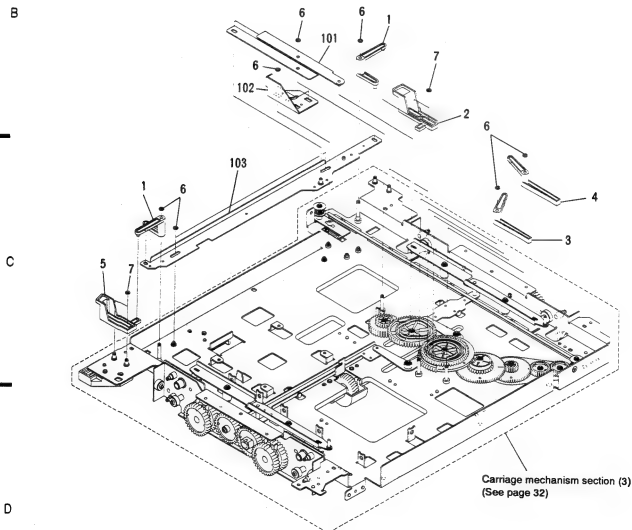
- 1) Draw the slider assembly in the direction arrow fully.
- 2) Check that the LD gear (C) fits the hole of the V base chassis assembly.
- 3) If both steps 1) and 2) above are satisfied, the convex section of the slider assembly should fit the concave section of the synchro belt. Insert the belt stopper here.



4.20 CARRIAGE MECHANISM SECTION (2)

Parts List

Mark	No.	Description	Part No.
A	1	TS lever	VNL1461
	2	TS plate (R)	VNL1463
	3	Switch lever 1	VNL1464
	4	Switch lever 2	VNL1465
	5	TS plate (F)	VNL1462
	6	Washer	WT26D047D050
	7	E ring	YE25FUC
NSP	101	TS cam lever assembly	VXA1736
NSP	102	Slider stopper	VNE1732
NSP	103	TS joint plate assembly	VXA1737



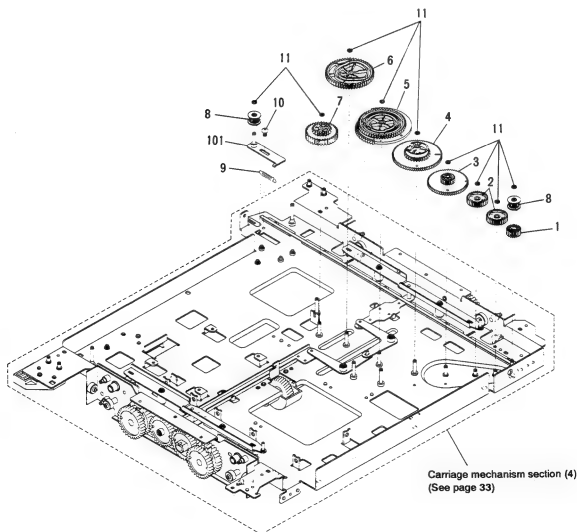
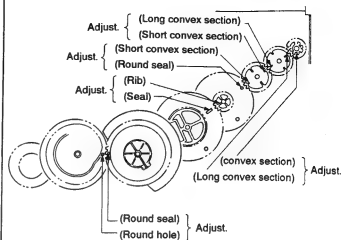
4.21 CARRIAGE MECHANISM SECTION (3)

Parts List

Mark	No.	Description	Part No.
A	1	LD gear (A)	VNL1451
	2	LD gear (B)	VNL1452
	3	LDgear (C)	VNL1453
	4	LDgear (D)	VNL1454
	5	LDgear (E)	VNL1455
	6	LDgear (F)	VNL1456
	7	LDgear (G)	VNL1457
	8	LD pulley assembly	VXA1729
	9	Pulley base spring	VBH1172
	10	Screw	BBZ30P080FMC
	11	Washer	WT26D047D050
NSP	101	Pulley base assembly	VXA1730

Adjust the Gears

While adjusting LD gears (A) to (F), insert them.

Carriage mechanism section (4)
(See page 33)

4.22 CARRIAGE MECHANISM SECTION (4)

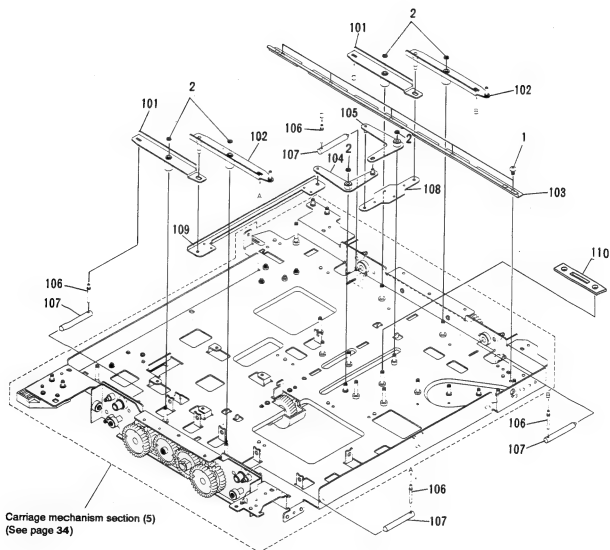
Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Screw	BBZ30P060FZK	NSP	106	Shaft pin	VLL1416
	2	Washer	WT26D047D050	NSP	107	Lock shaft	VLL1415
NSP	101	SP arm (L) assembly	VXA1734	NSP	108	SP joint plate (R)	VNE1727
NSP	102	SP arm (R) assembly	VXA1735	NSP	109	SP joint plate (F)	VNE1726
NSP	103	TS guide plate	VNE1722	NSP	110	LD spacer	RNE1582
NSP	104	SP cam lever (F) assembly	VXA1732				
NSP	105	SP cam lever (R) assembly	VXA1733				

B

C

D



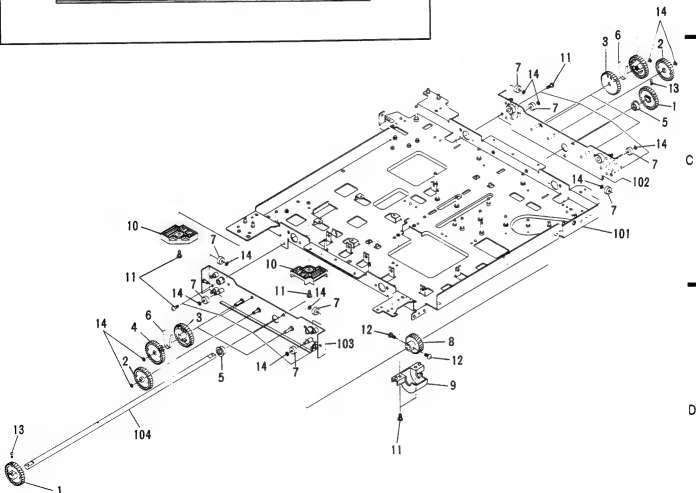
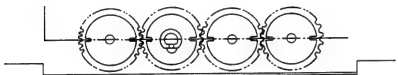
4.23 CARRIAGE MECHANISM SECTION (5)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
1	UD gear (A)	VNL1446		11	Screw	BBZ30P080FMC	
2	UD gear (B)	VNL1447		12	Screw	PMH20P060FMC	
3	UD gear (C)	VNL1448		13	Screw	BMZ20P060FMC	
4	UD gear (D)	VNL1449		14	Washer	WT26D047D050	
5	UD shaft holder	VLL1414		NSP	101	V base chassis assembly	VXA1711
6	UD spring plate	VBK1030		NSP	102	Gear plate (R) assembly	VXA1713
7	VB roller	RLP1043		NSP	103	Gear plate (F) assembly	VXA1712
8	UD worm wheel	VNL1445		NSP	104	UD synchro shaft	VLL1413
9	UD thrust holder	VNL1441					
10	Cable holder	VNL1440					

Adjusting the UD Gears

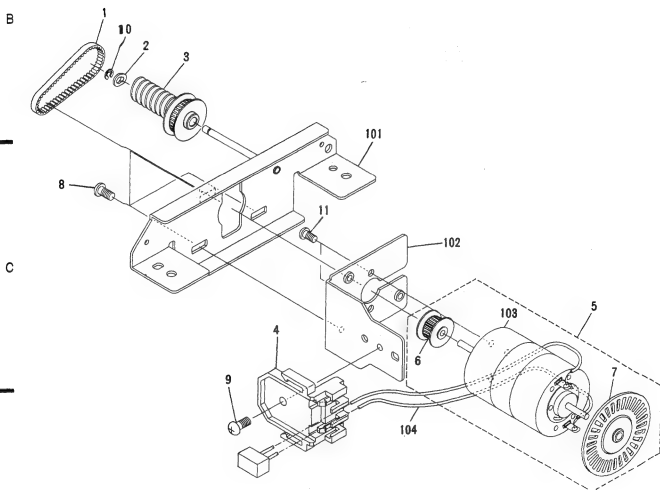
Adjust so that the convex sections inside the UD gears become a horizontal line and insert.



4.24 CARRIAGE MECHANISM SECTION (6)

Parts List

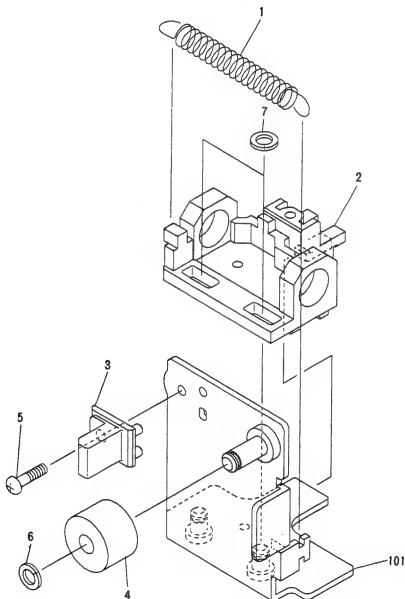
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Syrichro belt (A)	VEB1170	NSP	101	UDM bracket assembly	VXA1718
	2	Stainless washer	RBE1008	NSP	102	UDM Plate	VNE1695
	3	Worm pulley assembly	VXA1703	NSP	103	UD motor	VXM1047
	4	FG sensor holder	VNL1471	NSP	104	Connector assembly 2P	RKP1427
	5	UD motor assembly	RXX1438				
	6	UDM pulley assembly	VXA1728				
	7	UD sensor disc	VNL1444				
	8	Screw	BMZ30P080FMC				
	9	Screw	BBZ30P080FMC				
	10	E ring	YE20FUC				
	11	Screw	PMZ26P030FMC				



4.25 CARRIAGE MECHANISM SECTION (7)

Parts List

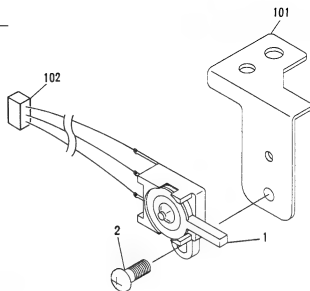
Mark	No.	Description	Part No.
A	1	Slider spring	VBH1173
	2	Slide base	VNL1458
	3	Slide hook	VNL1460
	4	Slide roller	RLP1044
	5	Screw	BBZ20P060FZK
	6	Washer	WT26D047D050
	7	Washer	WT21D040D050
NSP	101	Slide plate assembly	VXA1731



4.26 CARRIAGE MECHANISM SECTION (8)

Parts List

Mark	No.	Description	Part No.
A	1	Lever switch	DSK1003
	2	Screw	BMZ26P060FMC
NSP	101	Switch bracket	VNE1735
NSP	102	Connector assembly 3P	RKP1425

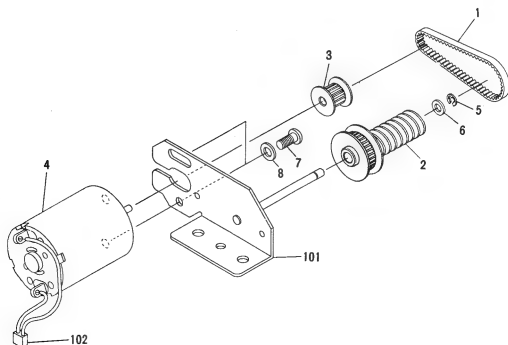


4.27 CARRIAGE MECHANISM SECTION (9)

Parts List

Mark	No.	Description	Part No.
A	1	Synchro belt (A)	VEB1170
	2	Worm pulley assembly	VXA1703
	3	Motor pulley	VNL1051
	4	Loading motor	VXM1048
	5	E ring	YE20FUC

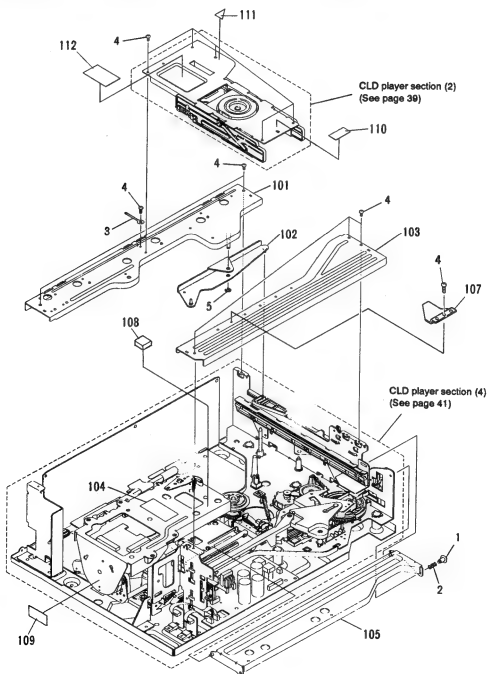
Mark	No.	Description	Part No.
B	6	Stainless washer	RBE1008
	7	Screw	PMZ30P030FMC
	8	Washer	WB30FMC
NSP	101	LDM bracket assembly	VXA1719
NSP	102	Connector assembly 2P	RKP1426



4.28 CLD PLAYER SECTION (1)

Parts List

A	Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
		1	Screw (B)	VBA1008		106	.....
		2	Arm spring	VBH1063	NSP	107	Dump plate	RNE1590
		3	Cord clamper	VNF-069	NSP	108	Dump cushion	VEC1602
		4	Screw	BBZ30P060FMC	NSP	109	Caution label	RRW1104
		5	E ring	YE40FUC	NSP	110	Caution label HE (SEM type)	PRW1233
NSP	101		Bridge (R) assembly	VXA1722				
NSP	102		Clamper arm assembly	VXA1721	NSP	111	Caution label (G) (SEM type)	VRW-329
NSP	103		Bridge (L)	VNE1708				
NSP	104		Caution label	VRW1073	NSP	112	Caution label (SEM type)	VRW1094
NSP	105		Tray guide assembly	VXA1709				

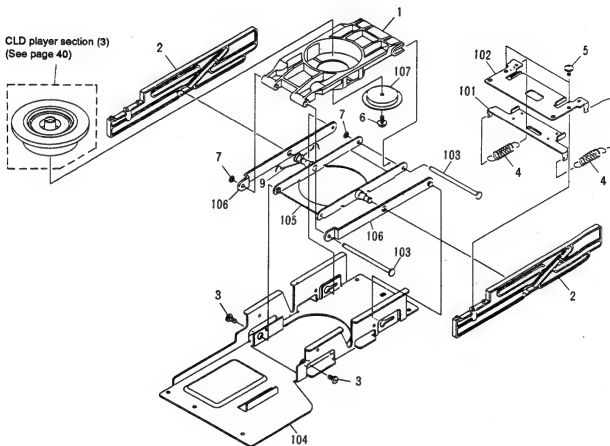


4.29 CLD PLAYER SECTION (2)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Clamper holder	VNL1305	NSP	101	Limiter plate	VNE1551
	2	Clamp cam	VNL1527	NSP	102	Slide plate	VNE1556
	3	Pivot screw	VBA1022	NSP	103	Clamp shaft	VLL1299
	4	Limiter spring	VBH1168	NSP	104	Center plate	VNE1562
	5	Screw	IP230P060FMC	NSP	105	Lever (B) assembly	VXA1504
	6	Screw	IMZ30P060FMC	NSP	106	Lever (A) assembly	VXA1503
	7	Washer	WT26D060D050	NSP	107	Clamper head	VNE1546
	8	.....				
	9	Clamp torsion	RBH1321				

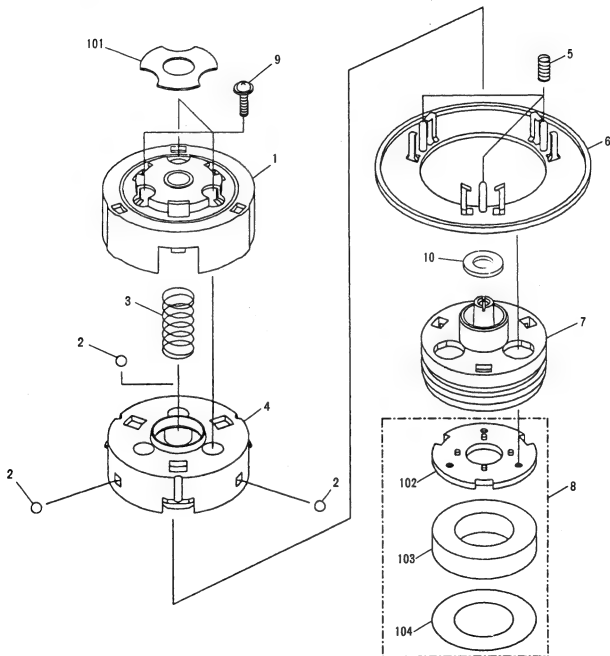
CLD player section (3)
(See page 40)



4.30 CLD PLAYER SECTION (3)

Parts List

A	Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	A
		1	Clamper cover	VNL1363	NSP	101	Rubber cushion (A)	VEB1146	
		2	Steel ball	VNX1006	NSP	102	Clamper plate	VNE1549	
		3	Centering spring (B)	VBH1130	NSP	103	Magnet	VMG1010	
		4	Clamper base	VNL1364	NSP	104	Gap sheet	VEC1561	
		5	Clamper spring	VBH1153					
		6	Disc clamper	VNL1362					
		7	Centering hub (B)	VNL1435					
		8	Magnet assembly - S	VXX1475					
		9	Screw	AMZ20P040FMC					
		10	Washer	WA60F115M160					

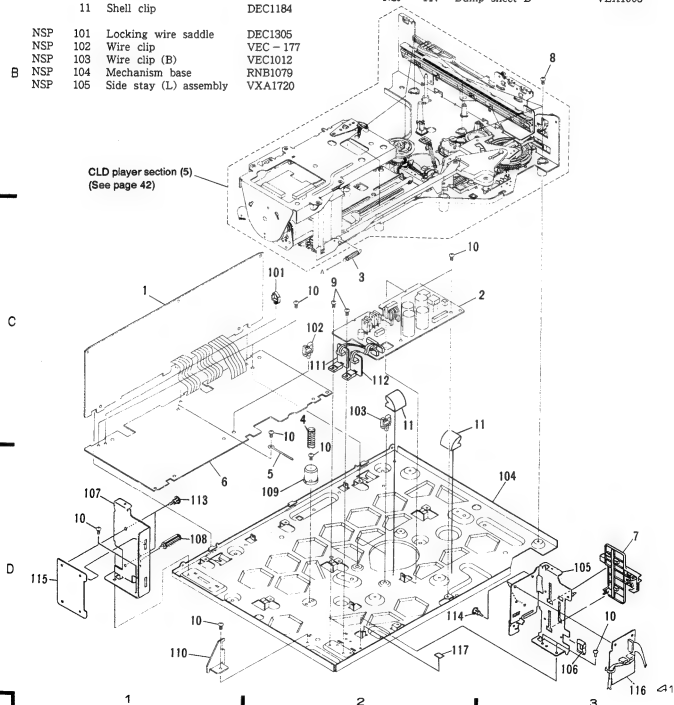


4.31 CLD PLAYER SECTION (4)

Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	⊙	1 VDEM unit (KUC type)	RWZ2751	NSP	106	Edge guard (B)	DEC1144
	⊙	VDEM unit (SEM type)	RWZ2766	NSP	107	Side stay (R)	VNE1712
	NSP	2 SPDB unit	RWZ2745	NSP	108	PCB post (29)	DEC1390
		3 TB lock spring (C)	VBH1177	NSP	109	Spring guide	VNL1343
		4 Base spring	VBH1145	NSP	110	TB lock (A)	VNE1713
		5 Cord clamber	DNF1128				
⊙		6 FTSB unit (KUC type)	RWZ2750	NSP	111	REGA unit	RWZ2746
	⊙	FTSB unit (SEM type)	RWZ2765	NSP	112	REGB unit	RWZ2747
		7 Slide rail (C)	VNL1424	NSP	113	PCB holder	PNW1706
		8 Screw	IBZ30P080FMC	NSP	114	PCB holder	PNW2029
		9 Screw	BBZ30P080FMC	NSP	115	SCNS unit	RWZ2748
		10 Screw	BBZ30P060FMC				
		11 Shell clip	DEC1184	NSP	116	SCNP unit	RWZ2749
				NSP	117	Dump sheet B	VEX1003
NSP	101	Locking wire saddle	DEC1305				
NSP	102	Wire clip	VEC-177				
NSP	103	Wire clip (B)	VEC1012				
NSP	104	Mechanism base	RNB1079				
NSP	105	Side stay (L) assembly	VXA1720				

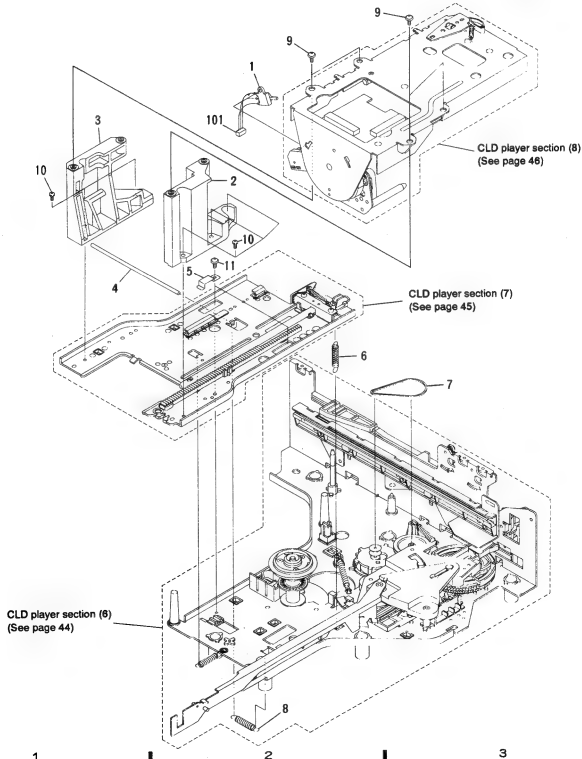
CLD player section (5)
(See page 42)



4.32 CLD PLAYER SECTION (5)

Parts List

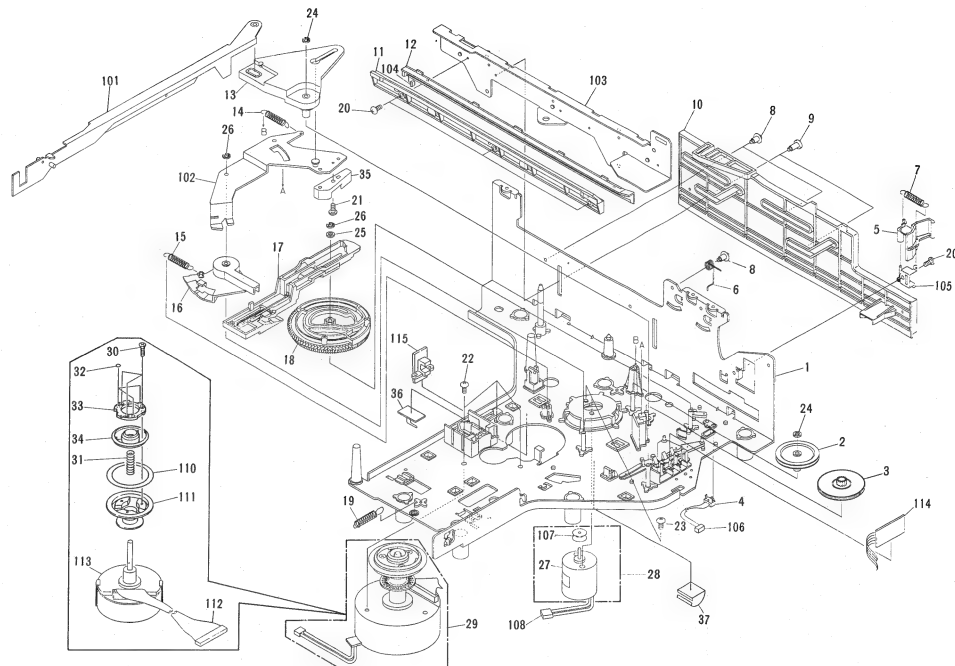
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
A	1	Lever switch	DSK1003		6	Tilt spring	VBH1146
	2	Post (L)	VNL1415		7	Belt	PEB1013
	3	Post (R)	VNL1416		8	Thrust spring	VBH1163
	4	Tilt shaft	VLL1326		9	Screw	IPZ30P100FCU
	5	Plate spring	VBK1013		10	Screw	IBZ30P100FMC
					11	Screw	ABZ26P050FMC
NSP	101	Connector assembly 3P	RKP1440				



4.33 CLD PLAYER SECTION (6)

Parts List

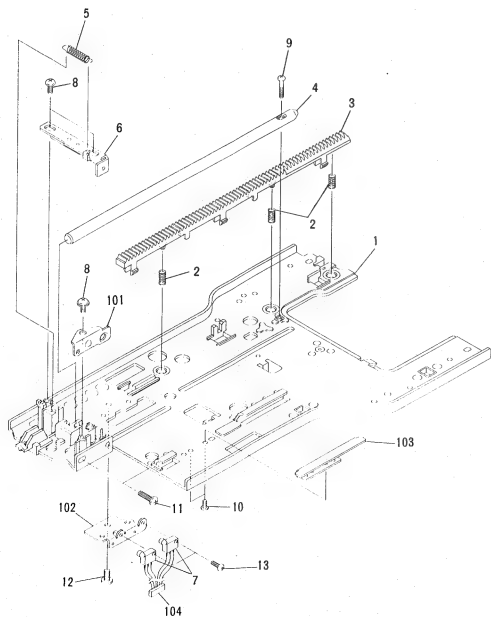
Mark	No.	Description	Part No.
A	1	Chassis assembly	VXA1704
	2	Gear pulley	VNL1249
	3	2 step gear	VNL1325
	4	Push switch	DSG1014
	5	Tray lock (B)	VNL1426
	6	Slide cam spring	VBH1180
	7	Tray lock spring (B)	VBH1175
	8	Screw (B)	VBA1008
	9	Screw (C)	VBA1015
	10	Slide cam	VNL1420
	11	Slide rail (A)	VNL1422
	12	Slide rail (B)	VNL1423
	13	TB lock (D)	VNL1433
	14	TB lockspring (F)	VBH1178
	15	Tilt cam spring	VBH1176
B	16	Tilt cam	VNL1421
	17	Spring slanting cam	VNL1315
	18	Cam gear	VNL1350
	19	Radial spring	VBH1164
	20	Screw	BMZ26P060FMC
	21	Screw	BMZ26P040FMC
	22	Screw	FMA30P050FCU
	23	Screw	PMZ30P040FCU
	24	Washer	WT26D047D025
	25	Washer	WA32N080W050
	26	E ring	YE23PUC
	27	Loading motor	VXM1048
	28	Loading motor assembly	RXX1524
	29	Spindle motor assembly	RXX1544
	30	Screw	CBZ20P080FMC
C	31	Centering spring	VBH1024
	32	Sheet	VEB1194
	33	Yoke plate A	VNE1835
	34	Centering hub (A)	VNT1020
	35	TB lock (E)	VNL1434
	36	Cord keep	DNH1285
	37	Shell clip	DEC1184
NSP	101	TB lock (C) assembly	VXA1723
NSP	102	TB lock (F) assembly	VXA1724
NSP	103	Slide plate	VNE1717
NSP	104	Slide rail cushion	REC1113
NSP	105	Lock holder assembly	VXA1710
NSP	106	Connector assembly 2P	RKP1438
NSP	107	Motor pulley	VLL1176
NSP	108	Connector assembly 2P	RKP1437
NSP	109	.....
NSP	110	Rubber sheet	VEB1035
D	111	Turn table assembly	RXA1519
	112	Connector assembly 11P	RKP1513
	113	Spindle motor	RXM1056
NSP	114	MSWB unit (KUC type)	RWZ2753
NSP		MSWB unit (SEM type)	RWZ2768
NSP	115	SPFG unit (KUC type)	RWZ2752
NSP		SPFG unit (SEM type)	RWZ2767



4.34 CLD PLAYER SECTION (7)

Parts List

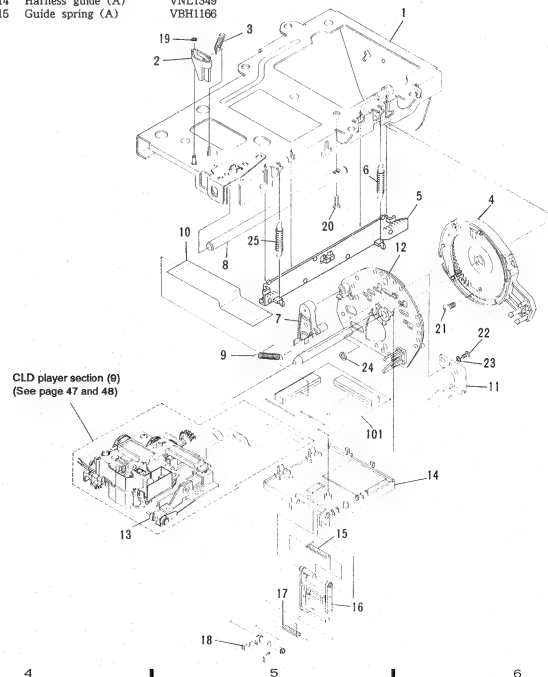
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
⊙	1	Tilt base (lower) assembly	VXA1798	NSP	101	S plate clumper	VNE1621
	2	Rack spring	VBH1133	NSP	102	SW holder	VNE1620
	3	Rack gear (lower)	VNL1346	NSP	103	Roller shaft holder plate	VNE1666
	4	Carriage shaft (lower)	VLL1325	NSP	104	Connector assembly 4P	RKP1439
	5	S plate spring	VBH1149				
	6	Shaft plate (lower) assembly	VXA1628				
	7	Slide switch	OSH1001				
	8	Screw	IPZ20P080FMC				
	9	Screw	PPZ20P120FMC				
	10	Screw	FMZ20P030FMC				
	11	Screw	BMZ26P100FMC				
	12	Screw	BBZ30P060FCC				
	13	Screw	PMZ20P060FMC				



4.35 CLD PLAYER SECTION (8)

Parts List

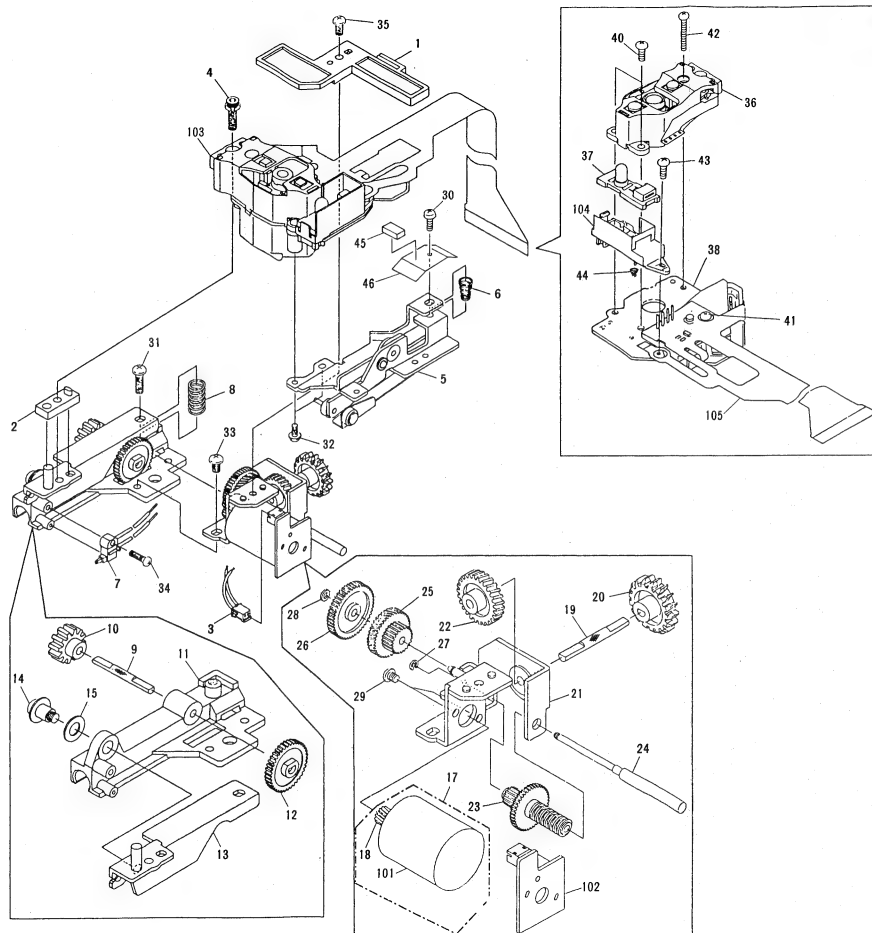
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Tilt base (upper) assembly	VXA1808	16		Harness guide (B)	VNL1408
	2	SW lever	VNL1359	17		Guide spring (B)	VBH1155
	3	SW lever spring	VBH1150	18		Harness guide (C)	VNL1351
	4	Internal gear assembly	VXA1903	19		Washer	WT16D032D025
	5	Rack gear (upper)	VNL1417	20		Screw	FMZ20P120FMC
	6	Rack spring (upper)	VBH1179	21		Screw	BBZ26P060FCC
	7	Lock lever	VNL1351	22		Screw	IBZ20P040FZK
	8	Carriage shaft (upper)	VLL1324	23		Washer	WB20FMC
	9	Lever spring	RBH1323	24		Washer	WT36D072D050
	10	Flexible cable (22P)	RDD1236	25		Rack spring (IN)	RBH1322
	11	Lock plate	VBK1026	NSP	101	CNNB assembly	VWG1194
	12	R plate assembly	VXA1579				
	13	Carriage assembly	VWT1079				
	14	Harness guide (A)	VNL1349				
	15	Guide spring (A)	VBH1166				



4.36 CLD PLAYER SECTION (9)

Parts List

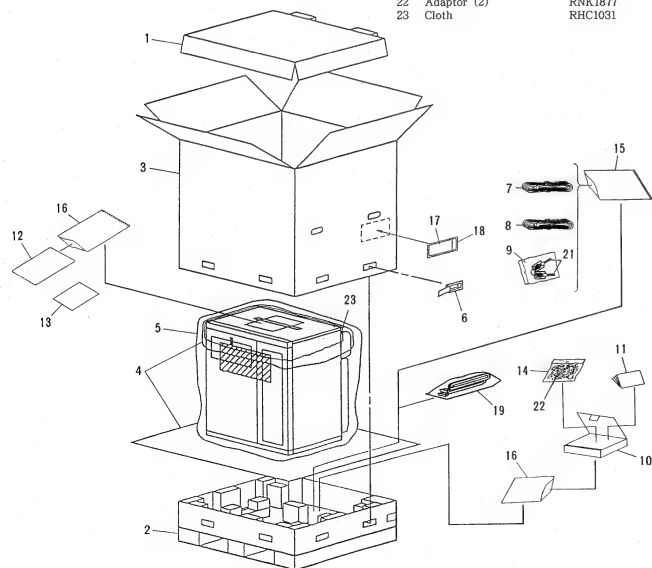
Mark	No.	Description	Part No.
A	1	Flexible holder	VNL1358
	2	PU base	VNT1037
	3	Housing assembly (LSMP2P)	VKP1852
	4	Bolt 2.6x10	VLL1192
	5	TAN base assembly	VXA1752
	6	TAN spring	VBH1151
	7	Slide switch (CD, B INSIDE)	VSK1008
	8	TRKG spring	VBH1204
	9	SL shaft (B)	VLL1334
	10	Gear (F)	VNL1356
B	11	Carriage shaft holder	VNT1039
	12	Gear (E)	VNL1355
	13	PU plate assembly	VXA1583
	14	Screw	VLL - 183
	15	Washer	VEF - 027
	16	.....
	17	Carriage motor assembly-S	VXX1537
	18	SL gear (A)	VNL1250
	19	SL shaft (C)	VLL1289
	20	Gear (G)	VNL1365
C	21	Motor holder assembly	VXA1939
	22	Gear (H)	VNL1357
	23	Gear (C)	VNL1353
	24	SL shaft (A)	VLL1333
	25	Gear (B)	VNL1352
	26	Gear (D)	VNL1354
	27	E ring	YE12FUC
	28	Washer	WT17D034D050
	29	Screw	JGZ20P022FMC
	30	Screw	PMZ26P100FMC
D	31	Screw	BMZ26P080FMC
	32	Screw	FMA20P040FMC
	33	Screw	FBZ26P040FMC
	34	Screw	FBZ20P070FCC
	35	Screw	BBZ26P050FMC
	36	Actuator assembly	VXX1551
	37	Sensor assembly	VEX1018
	38	Pre-pick up assembly	VXX1554
	39	.....
	40	Screw	FMA20P060FMC
NSP	41	Screw	FMA20P080FMC
	42	Screw	FMA20P140FMC
	43	Screw	BMZ20P060FMC
	44	Sensor spring	VBH1087
	45	Cushion	VEC1497
	46	Spacer	VEC1496
	101	Slider motor	VXM1027
	102	SLMB assembly	VNP1285
	103	Pick up assembly-S	VXX1679
	104	Sensor stay	VNH1037
NSP	105	HEAD assembly	VWV1178



4.37 PACKING

Parts List






Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Pad (U)	RHA1097		11	Operating instructions (adaptor)	RRG1004
	2	Pad (L)	RHA1098		12	Operating instructions (English) (KUC type)	RRB1122
	3	Packing case (KUC type)	RHG1391			Operating instructions (English, French, German, Italian, Spanish) (SEM type)	RRE1066
		Packing case (SEM type)	RHG1400		13	Sub instructions	RRG1005
	4	Mirror mat	RHC1029		14	Adaptor (2) assembly	RXA1524
	5	Packing bag	RHL1013		15	Vinyl bag	Z21-029
	6	PP joint	AHG-204		16	Vinyl bag	VHL-014
	7	Cord with plug (VIDEO)	DDE1014	NSP	17	Follow up card (KUC type)	DRY1032
	8	Cord with plug (AUDIO)	DDE1016	NSP	18	Vinyl bag (KUC type)	DHL1011
	9	Key assembly	DXC1002		19	9P D-Sub cord	RDE1033
	10	Adaptor case	RHF1032	NSP	20	Serial label (KUC type)	RRW1113
					21	Key	DNK1698
					22	Adaptor (2)	RNK1877
					23	Cloth	RHC1031



5. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS

Note:

(Type 4)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
3. **RESISTORS:**
Unit: k: k Ω , M: M Ω , or Ω unless otherwise noted.
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
Tolerance: (F): $\pm 1\%$, (G): $\pm 2\%$, (K): $\pm 10\%$, (M): $\pm 20\%$ or $\pm 5\%$ unless otherwise noted.
4. **CAPACITORS:**
Unit: p: pF or μ F unless otherwise noted.
Ratings: capacitor (μ F)/ voltage (V) unless otherwise noted.
Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
Unit: m: mH or μ H unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
 : DC voltage (V) in PLAY mode unless otherwise noted.
 mA or - mA : DC current in PLAY mode unless otherwise noted.
Value in () is DC current in STOP mode.
7. **OTHERS:**
 -  : Signal route.
 -  : Adjusting point.
 -  (Red) : Measurement point.
 - The Δ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

SYSB unit

S101 : CURSOR ◀
S102 : CURSOR ▲
S103 : CURSOR ▶
S104 : CURSOR ▼
S105 : MODE -
S106 : MODE +

DISP unit

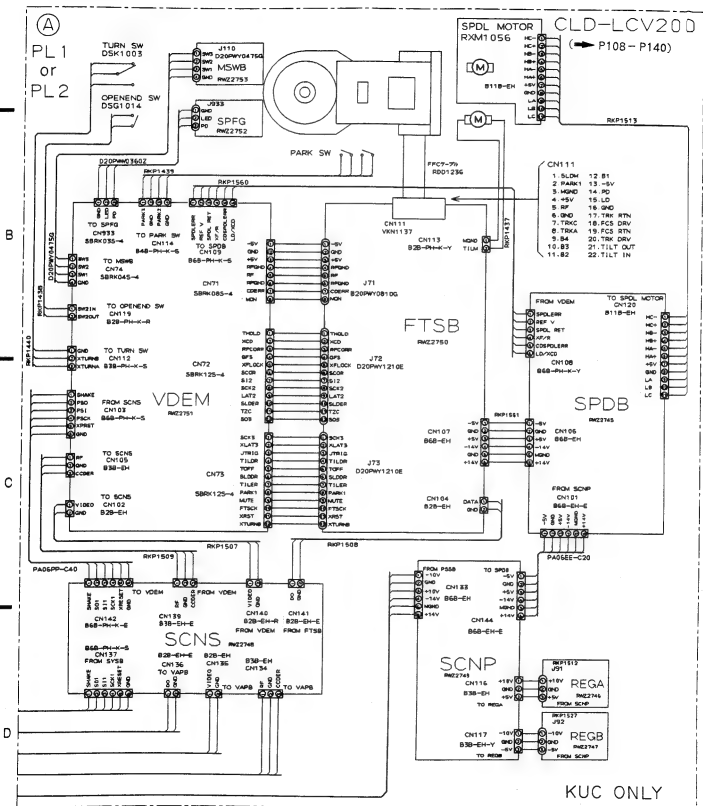
S301 : 1
S302 : 2
S303 : 3
S304 : 4
S305 : 5
S306 : 6
S307 : 7
S308 : 8
S309 : 9
S310 : 10
S311 : OPEN/CLOSE
S312 : STANDBY ON

1. OVERALL WIRING DIAGRAM (MAIN SECTION AND CARRIER BASE SECTION)

Note: For LC-V200/KUC, the schematic diagram ⑧ for CLD-LCV100 on page 55 is used instead of the following schematic diagram ⑧.

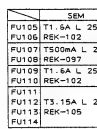
A

A





-SEM ONLY Y



SEM ONLY

The schematic diagram illustrates the electrical connections for a power supply system, centered around the PSSB UNIT (RWZ 2755:KUC) and a REGULATOR. The diagram is organized into several sections, each with a numbered list of components and their values.

Section 1 (Top Left):

- 76-EH: PU106, PU07, PU06
- 87B-EH-2: CN17
- 87B-EH-R: CN18
- ACSV
- ACSV
- ACSV
- ACSV
- GND
- ACSV

Section 2 (Top Right):

- 84B-EH: CN1
- SWEV
- GND
- XPWRON
- US10V

Section 3 (Middle Right):

- 87B-EH: CN7
- ACSV
- CT
- XPWRON
- +5V
- +5V
- GND
- 5V

Section 4 (Bottom Right):

- 83B-EH: CN9
- +5V
- GND
- 5V

Section 5 (Bottom Right):

- 88B-EH-Y: CN15
- AC24V
- AC24V
- AC12V
- C.T.
- C.T.
- C.T.
- 5V
- GND
- +5V

Section 6 (Bottom Right):

- 86B-EH: CN15
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 7 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 8 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 9 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 10 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 11 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 12 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 13 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 14 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 15 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 16 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 17 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 18 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 19 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 20 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 21 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 22 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 23 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 24 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 25 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 26 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 27 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 28 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 29 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 30 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 31 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 32 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 33 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 34 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 35 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 36 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 37 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 38 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 39 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 40 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 41 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

Section 42 (Bottom Right):

- 86B-EH-R: CN16
- 10V
- GND
- +10V
- 14V
- MGND
- +14V

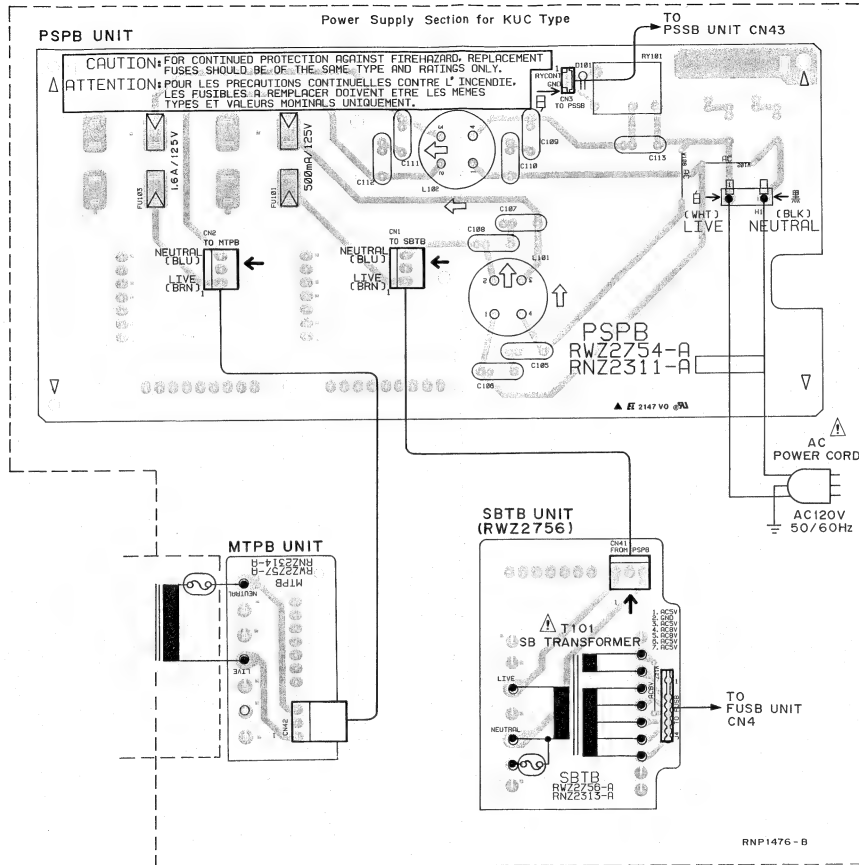
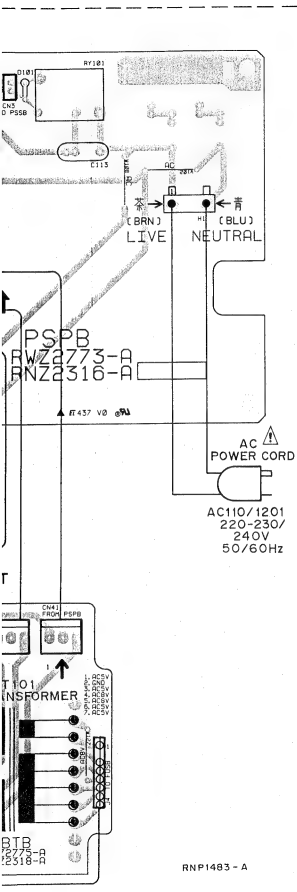
Section 43 (Bottom Right):

- 86B-EH-R:

1. Capacitors not specified are CKCYF.
2. Resistors not specified are 1/6W.
3. Be sure to use the specified component(component conforming to the safety standard) for parts with Δ .

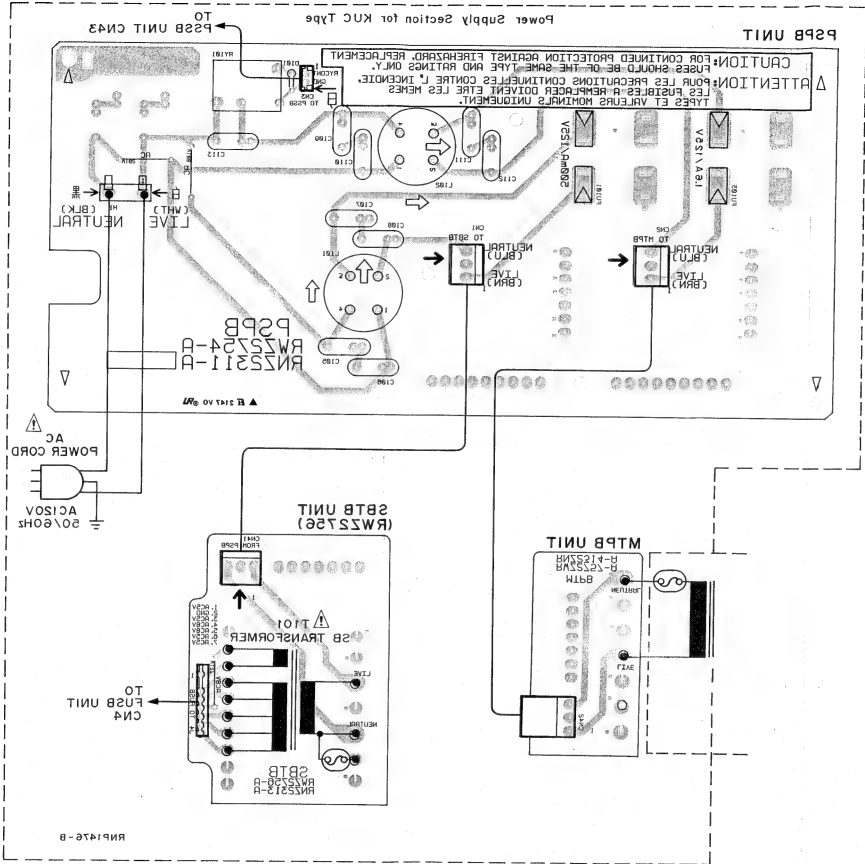
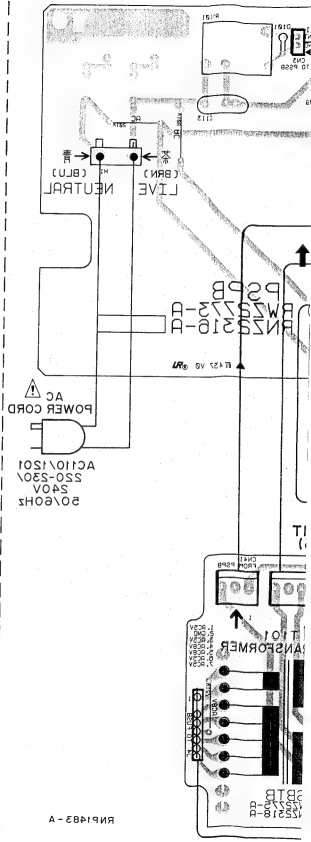






PCB pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zener diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Soviet capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resistor
		Thermistor

- This PCB connection diagram is viewed from the parts mounted side.
- The parts which have been indicated on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
- The capacitor terminal marked with \ominus shows negative terminal.
- The diode marked with \triangle shows cathode side.
- The transistor terminal marked with \square shows emitter.

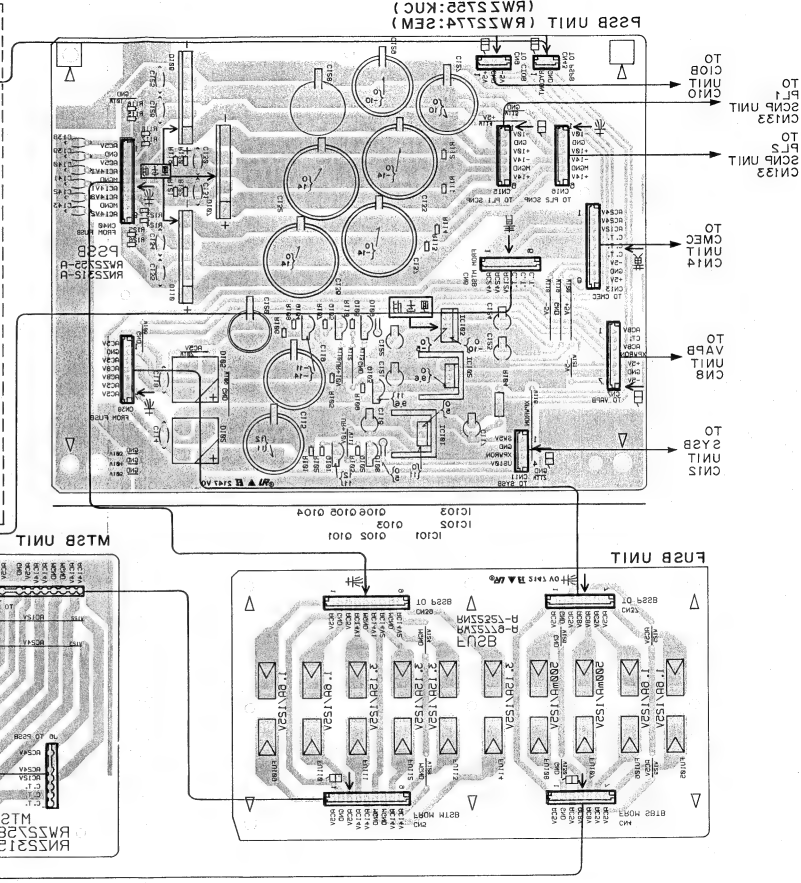
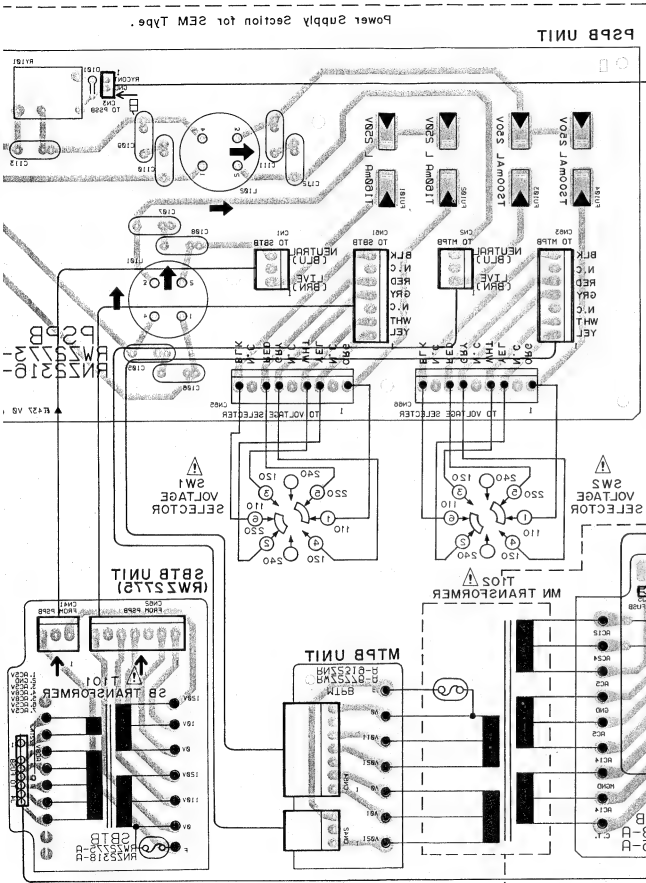


A

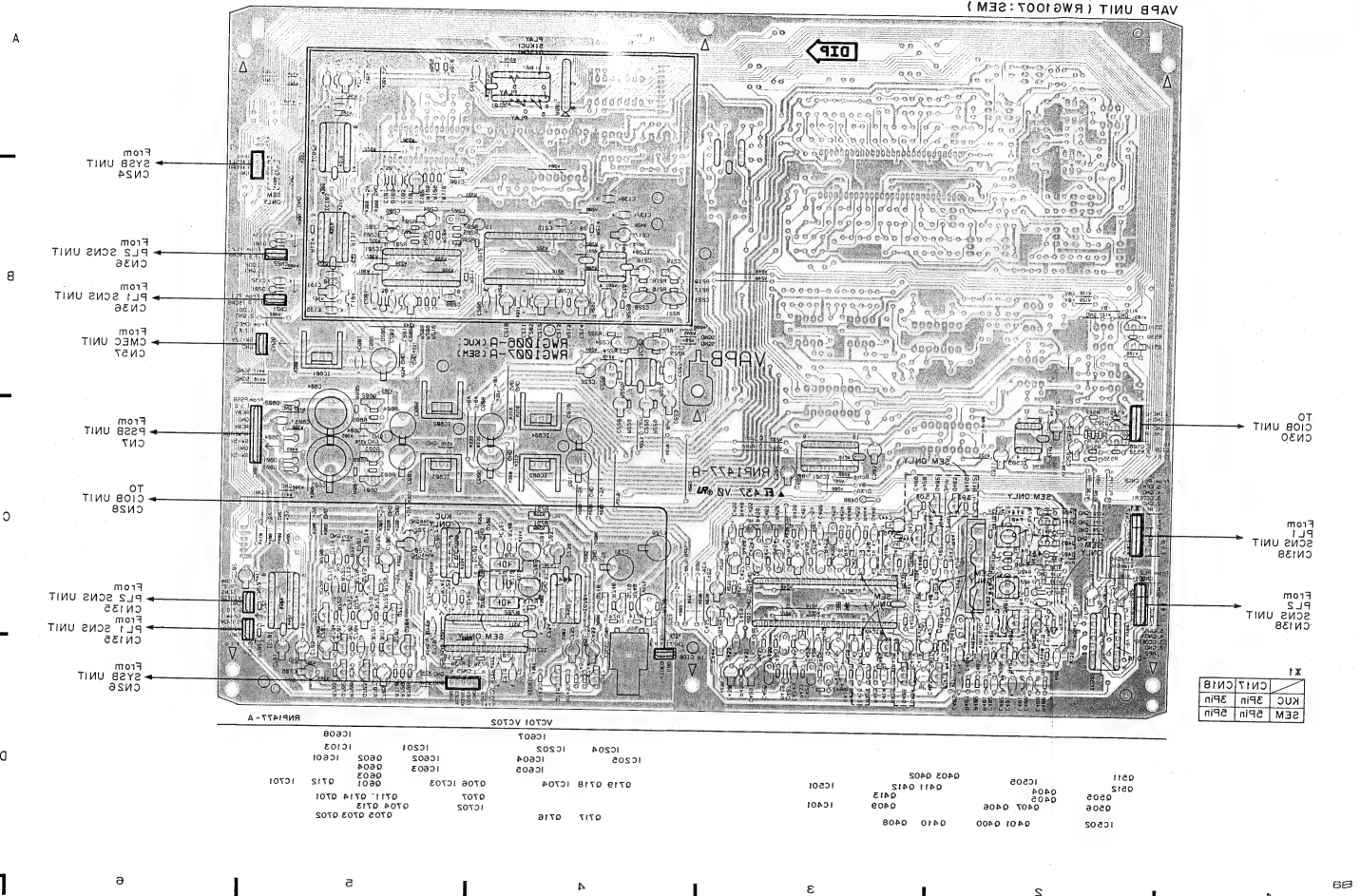
B

C

D



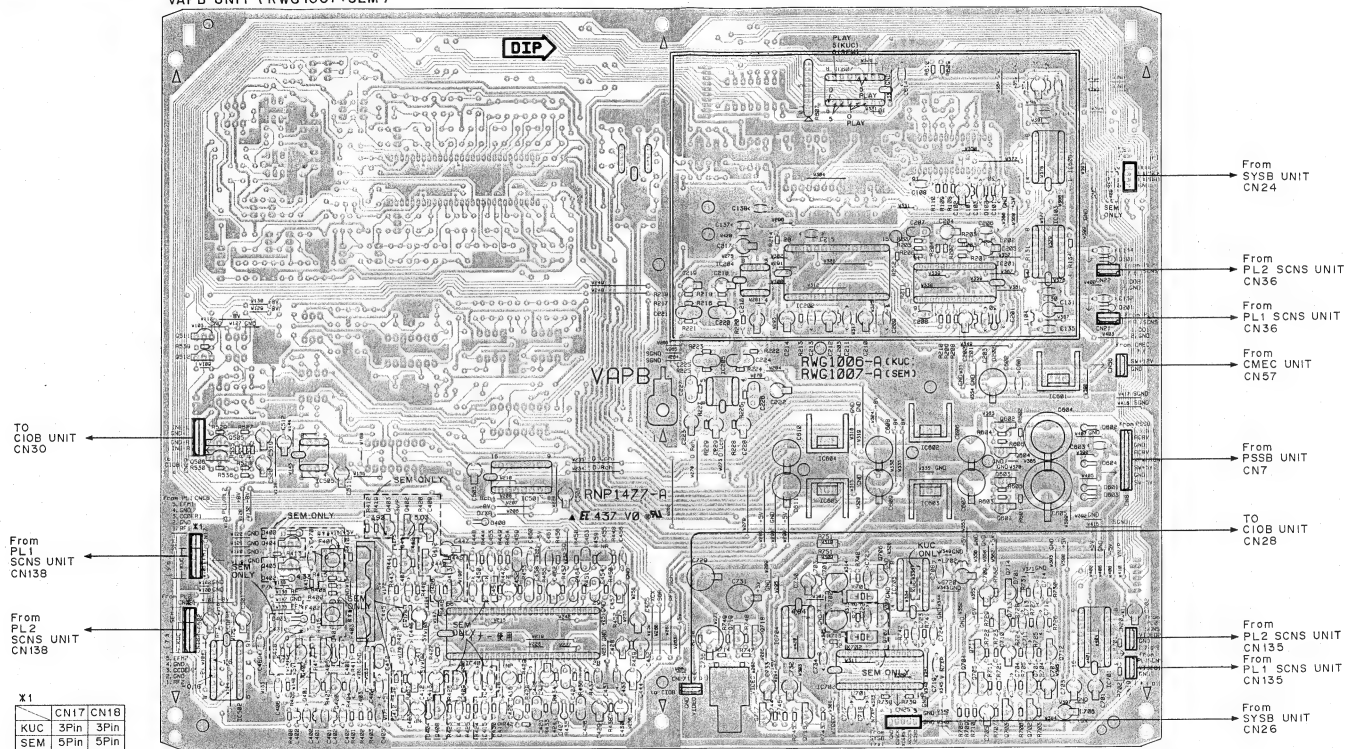
- View from soldering side



	CM17	CM18
KUC	3pin	3pin
SEM	5pin	5pin

3. VAPB UNIT

• View from component side

(RWG 1006 : KUC)
VAPB UNIT (RWG 1007 : SEM)

IC 701			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0.39	9	5
2	0	10	5
3	0.43	11	0
4	0.43	12	0.43
5	0	13	0.39
6	0	14	0.43
7	-5	15	0.39
8	0	16	5

IC 702			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	17	0.82
2	4.94	18	4.9
3	4.97	19	2.26
4	2.29	20	2.13
5	2.18	21	0.013
6	4.92	22	0.011
7	4.66	23	0.012
8	2	24	0.012
9	0	25	0.013
10	4.88	26	0.01
11	0	27	4.46
12	0.72	28	1.522
13	1.07	29	2.36
14	0.62	30	3.37
15	1.69	31	5.02
16	0.61	32	4.9

IC 202			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	2.0	15	0
2	3.95	16	0
3	5	17	0
4	5	18	0
5	2.43	19	5
6	0	20	0
7	2.43	21	0
8	0	22	0
9	0	23	1.51
10	0	24	2.34
11	0	25	1.72
12	4.99	26	0
13	0	27	0
14	0	28	1.98

IC 204			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	1.99	5	2.0
2	1.99	6	1.99
3	2.0	7	1.99
4	-8	8	8

IC 205			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	5	0
2	0	6	0
3	0	7	0
4	-8	8	8

IC 401			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	-2.82	29	0
2	0	30	0
3	0.01	31	-2.05
4	-4.93	32	-3.04
5	0	33	-3.06
6	-2.07	34	5.02
7	0.01	35	0
8	-2.03	36	0
9	-1.8	37	0
10	-1.84	38	-2.77
11	-2.1	39	0.08
12	-2.07	40	-4.79
13	-2.75	41	-3.67
14	0	42	-2.11
15	-2.11	43	0
16	-0.71	44	-2.76
17	-4.79	45	-2.07
18	0.08	46	-2.65
19	-2.76	47	-2.52
20	0	48	-1.81
21	0	49	-1.95
22	0	50	0
23	-3.06	51	-2.08
24	5.02	52	0
25	0.03	53	-4.93
26	-0.06	54	-0.75
27	-4.93	55	0
28	0	56	-2.82

Operation Conditions

During STOP

Blue back

No OSD (Screen display characters)

IC 201			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	16	2.0
2	2.38	17	0
3	2.37	18	0.74
4	5	19	0.79
5	4.97	20	0
6	2.37	21	2.44
7	5	22	0
8	4.92	23	2.43
9	0	24	0
10	0	25	0
11	4.05	26	0
12	3.26	27	1.99
13	1.72	28	0
14	3.26	29	1.98
15	5	30	5

IC 501			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	9	4.98
2	0	10	4.98
3	0	11	0
4	0	12	0
5	0	13	0
6	0	14	0
7	-8	15	0
8	0	16	8

IC 502			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0.056	9	4.98
2	0.044	10	4.98
3	-0.036	11	4.98
4	-0.036	12	0.54
5	-0.017	13	0.53
6	0	14	0.53
7	-8	15	0.017
8	0	16	8

IC 505			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	5	0
2	0	6	0
3	0	7	0
4	-8	8	8

IC 607			
Pin No.	Volts [V]	Pin No.	Volts [V]
1	0	9	2.88
2	0.015	10	4.98
3	2.9	11	4.98
4	4.98	12	4.98
5	4.98	13	4.98
6	0.8	14	0.021
7	4.92	15	0.007
8	4.98	16	5

Operation Conditions

During STOP

Blue back

No OSD (Screen display characters)

A

B

C

D

E

F

7

8

9

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

5

4

3

2

1

0

9

8

7

6

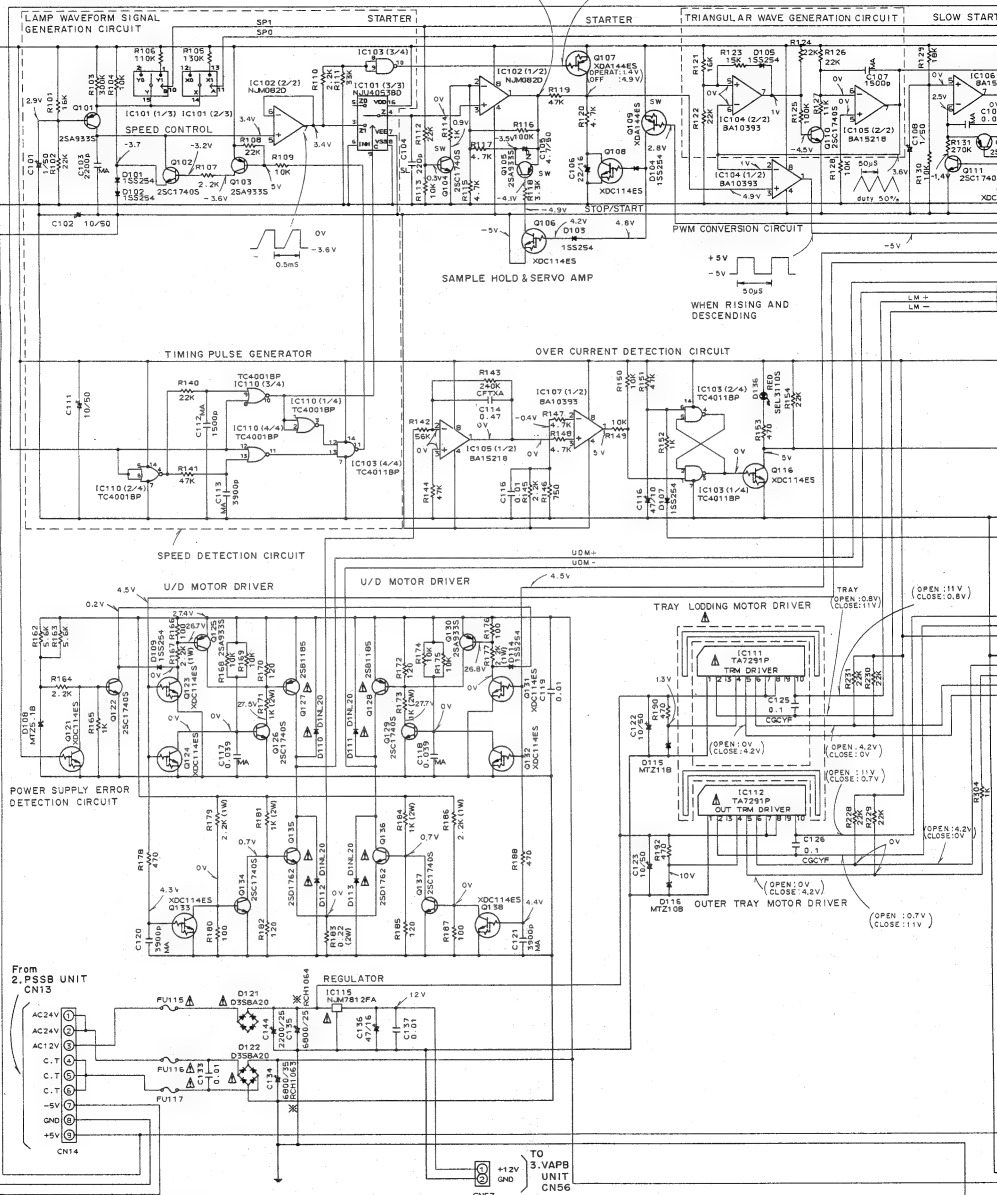
5

4

4. CMEC UNIT

	VERY SLOW	SLOW	FAST	VERY FAST
SPD	L	H	L	H
SP1	L	L	H	H

CMEC UNIT (RWG1008: KUC) (OPERAT: 1V OFF: -5.7V)
(RWG1009: SEM) (OPERAT: 5V OFF: 0.1V)



	KUC	SEM
FU115	2.5A/250V	T1AAL250V
REX-082		REX-102
FU116	2.5A/125V	T1AAL250V
FU117	REX-082	REX-102

• View from component side

(RWG1008 : KUC)
CMEC UNIT (RWG1009 : SEM)From
SYSB UNIT
CN53

OUTER SW

From
DSNA UNIT
CN49From
DSNB UNIT
CN46
LOCK SWOUTER
MOTORFrom
CNNB UNIT
CN51

SOLENOID

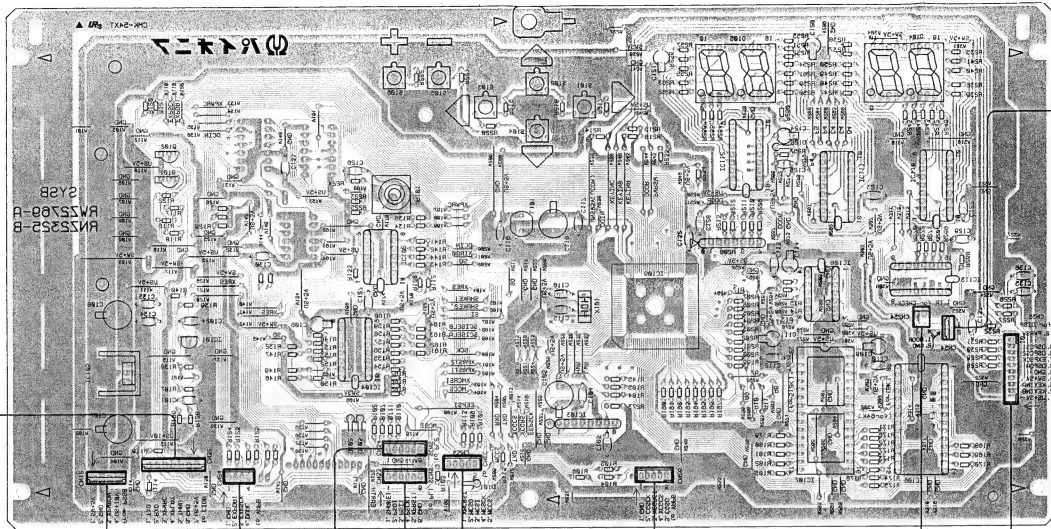
TO
VAPB UNIT
CN56From
PSSB UNIT
CN13RWG1008-A CMEC
RNP1484-B (KUC)

RNP1484-A

Q102	IC101	Q106	Q103	Q145	IC114	Q143	Q142	Q120
Q101	Q105	Q108	Q109	IC110	Q114	IC116	IC117	
Q107	IC102	Q104	Q116	Q112	IC109	IC111	IC112	
IC105	IC104	Q110	IC107	IC106	Q114			
IC108	Q122	Q123	Q125	Q127	Q111	Q113	Q115	
Q121	Q124	Q133	Q134	Q126	Q130	Q137	Q131	
	Q135	Q146	Q147	Q129	Q137	Q132	Q136	Q138
				Q136	Q138	IC115		



2528 UNIT (RW526a)

[illegible]

TP for CHECK

← VAPB UNIT

FROM
PSB UNIT
CNI

TO
VAPB
UNIT
CNS3

0
LS
CNC
N137

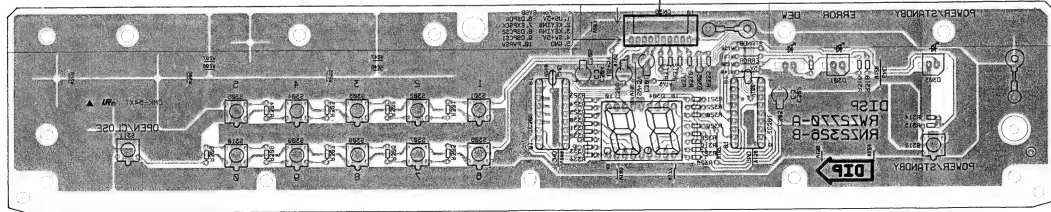
TO
PL
SCNC
CN137

TO
CMC
UNIT
CNS

TINU

TO
C10E
C13

DISP UNIT (RW5270)

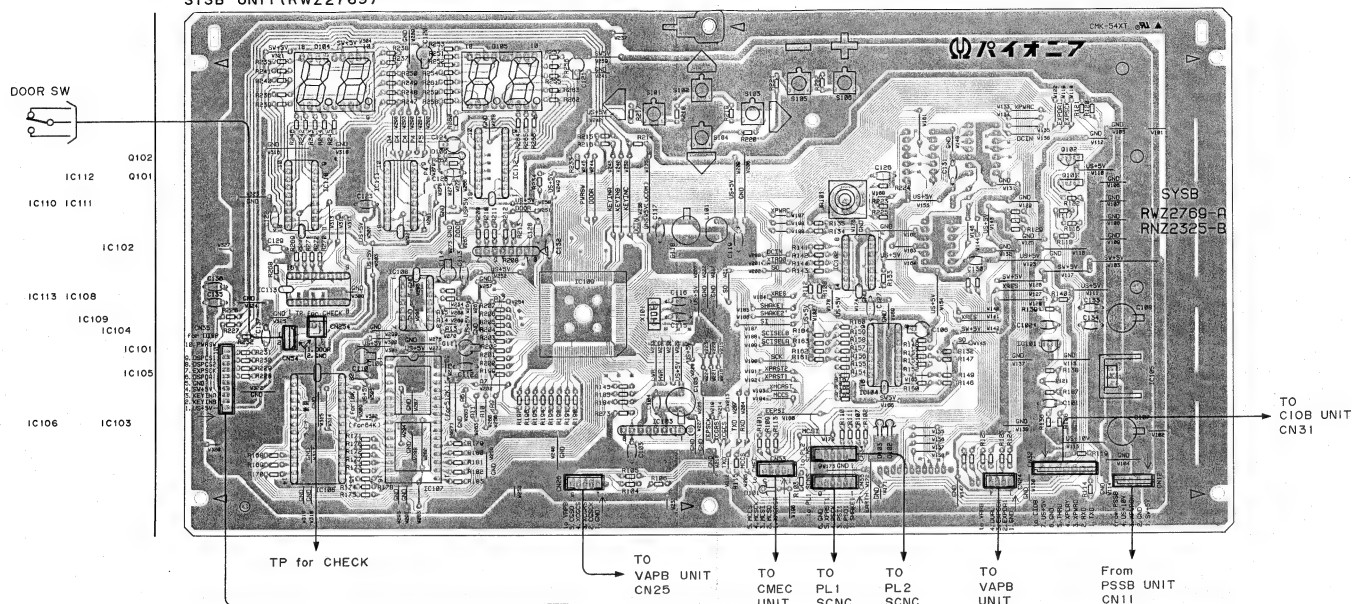


8-974191Я

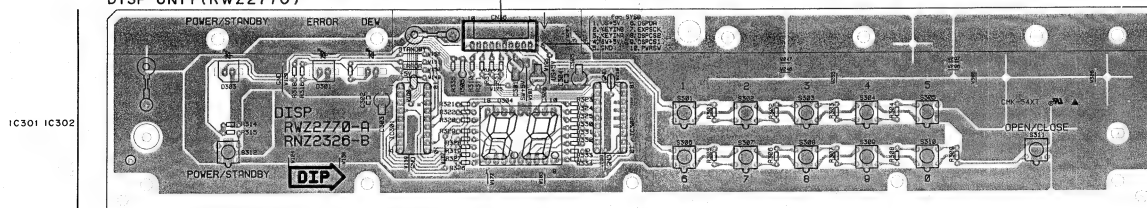
5. SYSB AND DISP UNIT

• View from component side

SYSB UNIT(RWZ2769)



DISP UNIT(RWZ2770)



RNP1479-B

● SYSB unit

Voltages of the pins of IC109 (1/2) (During STANDBY and POWER ON (STOP))

Pin No.	STAND BY	POWER ON
1	4.98V	4.98V
2	GND	GND
3	GND	GND
4	0V	5V
5	0V	②
6	0V	②
7	0V	5V
8	NC	NC
9	NC	NC
10	—	—
11	4.92V	4.92V
12	⑦	⑦
13	⑦	⑦
14	⑦	⑦
15	⑦	⑦
16	⑦	⑦
17	⑦	⑦
18	⑦	⑦
19	⑦	⑦
20	VSS	VSS
21	③	③
22	③	③
23	③	③
24	③	③
25	③	③
26	③	③
27	③	③
28	③	③

Pin No.	STAND BY	POWER ON
29	③	③
30	③	③
31	③	③
32	③	③
33	③	③
34	③	③
35	③	③
36	③	③
37	GND	GND
38	③	③
39	NC	NC
40	NC	NC
41	NC	NC
42	NC	NC
43	NC	NC
44	NC	NC
45	NC	NC
46	GND	GND
47	②	②
48	②	②
49	②	②
50	③	⑤
51	②	②
52	0V	④
53	0V	⑤
54	NC	NC
55	VCC	VCC
56	4.93V	4.93V

Refer to the waveforms (Page 90) for (No) s in the table.

Voltages of the pins of IC109 (2/2) (During STANDBY and POWER ON (STOP))

Pin No.	STAND BY	POWER ON
57	4.93V	0.015V
58	4.96V	4.96V
59	-	-
60	NC	NC
61	NC	NC
62	NC	NC
63	NC	NC
64	GND	GND
65	NC	NC
66	NC	NC
67	NC	NC
68	NC	NC
69	NC	NC
70	NC	NC
71	4.93V	④
72	4.93V	④
73	-	-
74	-	-
75	5.0V	0.026V
76	NC	NC
77	NC	NC
78	0	5.0V
79	0	5.0V
80	NC	NC
81	GND	GND
82	GND	GND
83	-	-
84	-	-

Pin No.	STAND BY	POWER ON
85	Following table	Following table
86	3.75V	3.75V
87	VCC	VCC
88	VCC	VCC
89	4.93V	4.93V
90	0	②
91	0	②
92	5.0V	②
93	4.46V	4.46V
94	4.95V	4.95V
95	5.0V	①
96	0	①
97	GND	GND
98	-	-
99	-	-
100	GND	GND
101	NC	NC
102	NC	NC
103	NC	NC
104	⑧	⑧
105	⑧	⑧
106	NC	NC
107	NC	NC
108	VCC	VCC
109	VCC	VCC
110	VCC	VCC
111	GND	GND
112	VCC	VCC

Pin No.	Normal	Voltage when the tact switch is pressed					
		Left (S101)	Top (S102)	Right (S103)	Bottom (S104)	- (S105)	+ (S106)
85	4.93V	0.053V	0.927V	1.784V	2.517V	3.313V	4.07V

Refer to the waveforms (Page 90) for ④ s in the table.

The voltage of the input/output terminal of the SYSB unit (RWZ2769)

Connector No.	No.	Signal Name	STAND BY	POWER ON (STOP)
CN53	1	XMCRST	0V	5V
	2	MCSO	0V	Waveform① in next page
	3	MCSI	0V	Waveform④ in next page
	4	MCSCCK	0V	Waveform② in next page
	5	MCCS	0V	Waveform② in next page

CN26	1	GND	0V	0V
	2	CGSCK	0V	Waveform② in next page
	3	XGCRST	0V	5V
	4	XCGCS	0V	Waveform② in next page
	5	CGSO	0V	Waveform① in next page

CN33 CN34	1	SHAKE 1	0V	Waveform② in next page
	2	PSO 1	0V	Waveform① in next page
	3	PSI 1	0V	Waveform② in next page
	4	PSCCK 1	0V	Waveform② in next page
	5	XPRST 1	0V	5V
	6	GND	0V	0V

CN24	1	GND	0V	0V
	2	EXPDA 1	0V	Waveform④ in next page
	3	EXPSCCK	Waveform③ in next page	Waveform⑤ in next page
	4	DUAL	5V for KUC (LC-V200) and 0V for SEM (LC-V100).	

CN32	1	TXD	4.95V	4.95V
	2	RXD	4.46V	4.46V
	3	XPWRC	5.0V	0.026V
	4	XPLAY	4.96V	4.96V
	5	THRU	0.006V	- 4.89V
	6	GND	0V	0V
	7	US + 5V	5.0V	5.0V

The voltage of the input/output terminal of the SYSB unit (RWZ2769)

Connector No.	No.	Signal Name	STAND BY	POWER ON (STOP)
CN12	1	SW + 5V	0V	5V
	2	GND	0V	0V
	3	XPWRON	0V	5V
	4	US + 10V	12V	12V

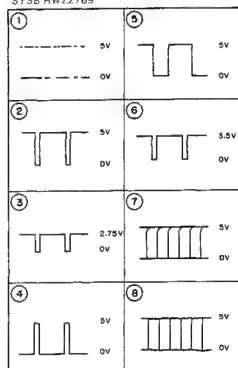
CN35	1	US + 5V	5V	5V
	2	KEY IN B	Following table	Following table
	3	KEY IN A	Following table	Following table
	4	SW + 5V	0V	5V
	5	GND	0V	0V
	6	DSPDA	Waveform ② in appendix 1	Waveform ② in appendix 1
	7	EXPSCCK	Waveform ⑥ in appendix 1	Waveform ⑥ in appendix 1
	8	DSPCS 2	Waveform ② in appendix 1	Waveform ② in appendix 1
	9	DSPCS 1	Waveform ② in appendix 1	Waveform ② in appendix 1
	10	PWRSW	0V when the STANDBY/ON key (S312) is ON and 5V when OFF.	

CN54	1	DOOR	0V when the front door is open and 5V when closed.
	2	GND	0V

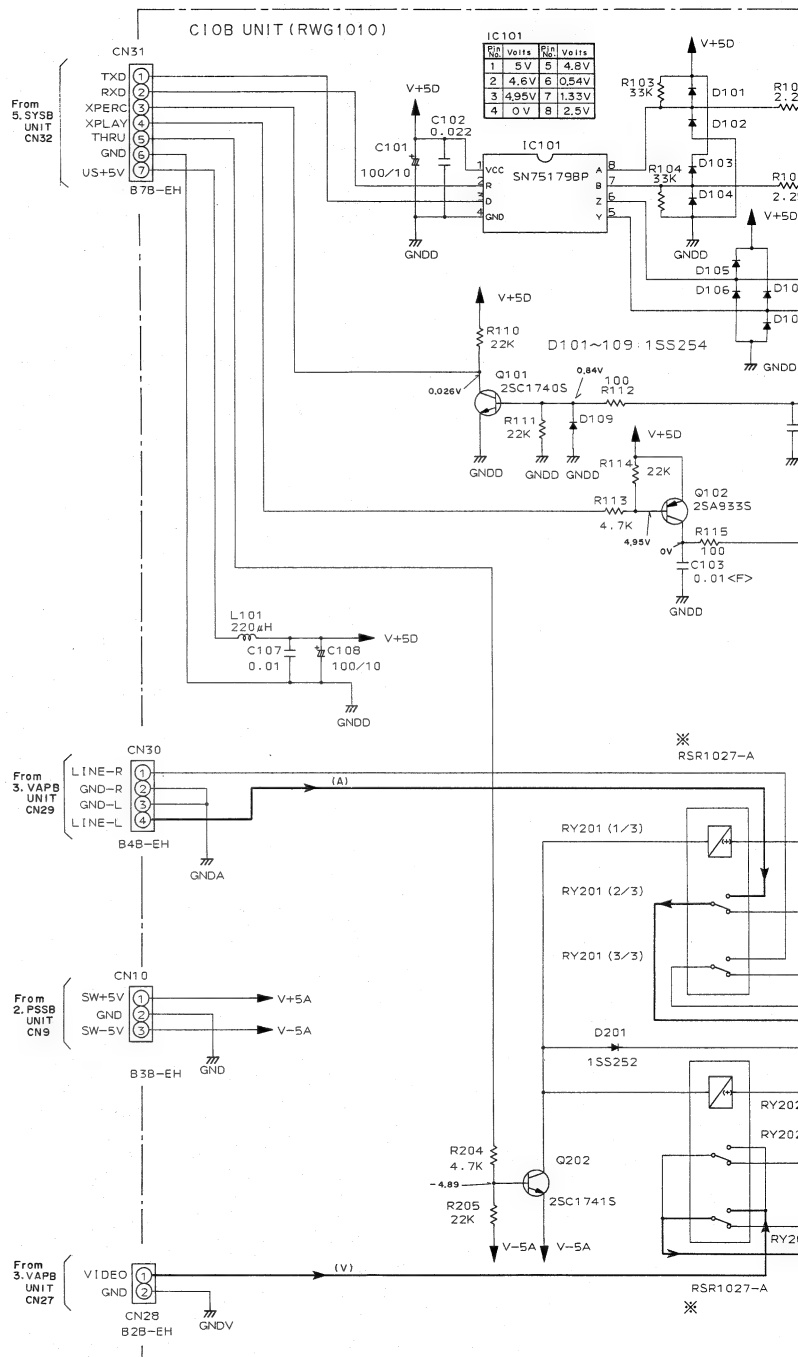
Connector No.	No.	Normal	Voltage when the key is pressed					
CN35	2	5V	1 (S301) 0V	2 (S302) 0.89V	3 (S303) 1.76V	4 (S304) 2.51V	5 (S305) 3.33V	
	3	5V	6 (S306) 0V	7 (S307) 0.89V	8 (S308) 1.76V	9 (S309) 2.51V	10 (S310) 3.33V	OPEN/CLOSE

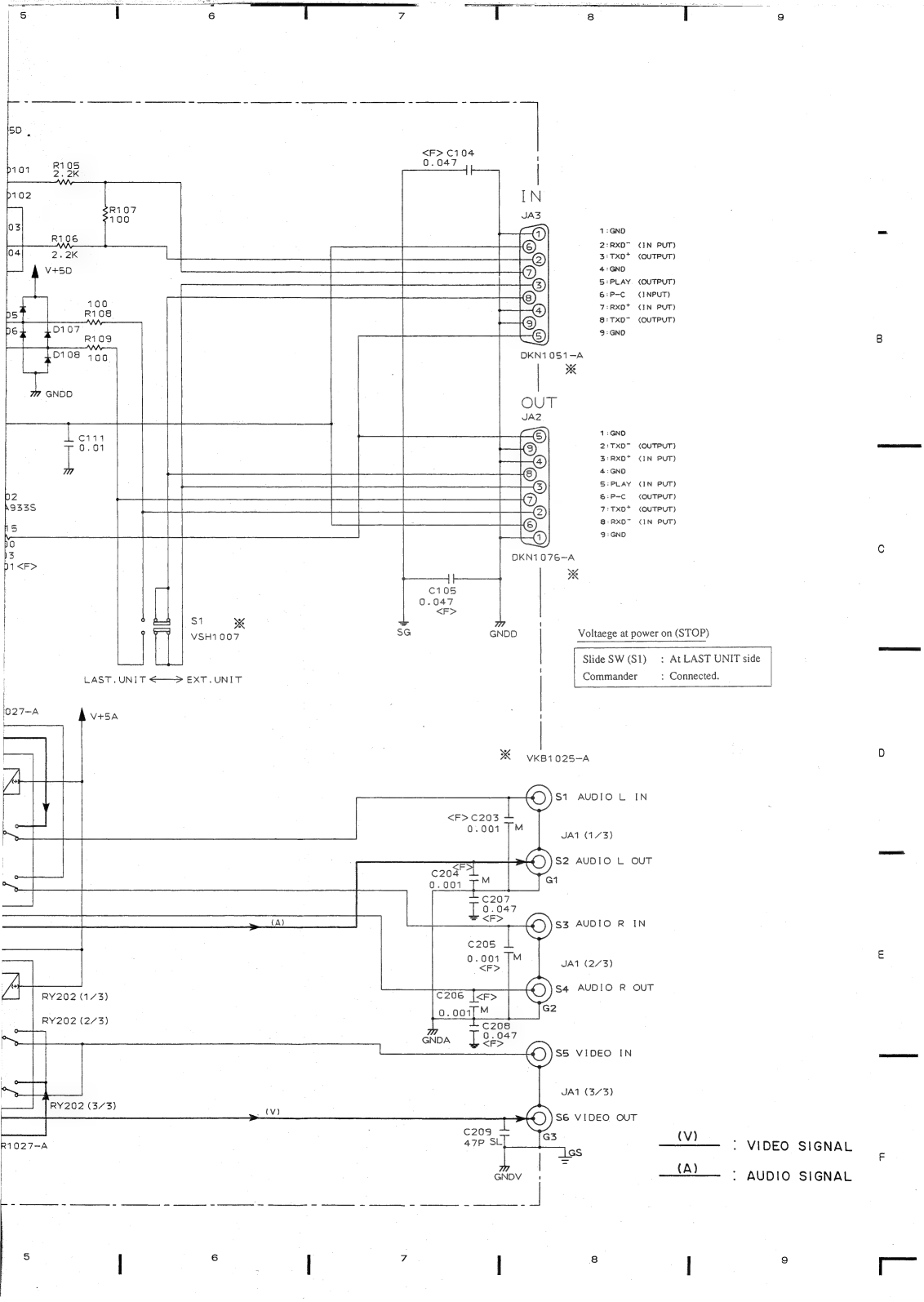
WAVEFORMS OF PNLB UNIT

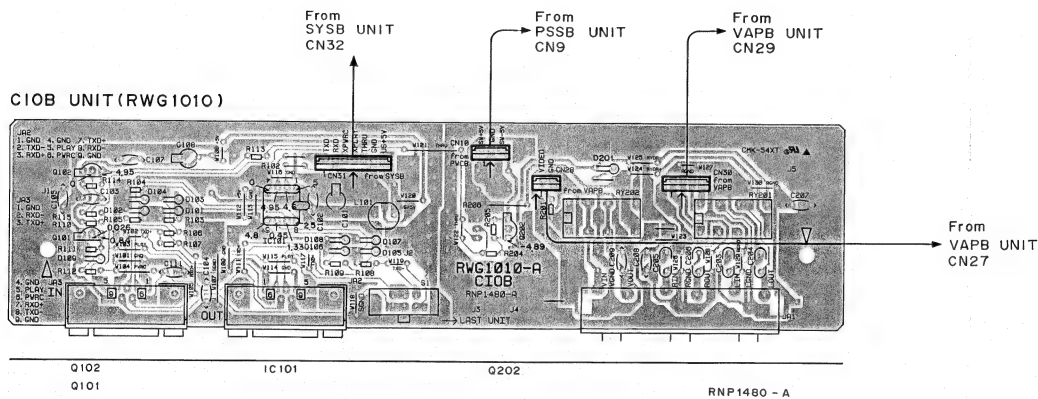
SYSB RWZ2769



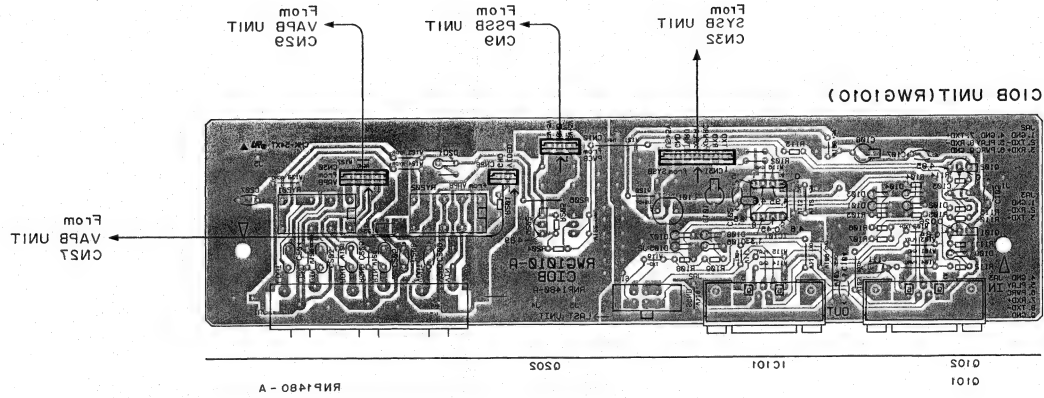
6. CIOB UNIT



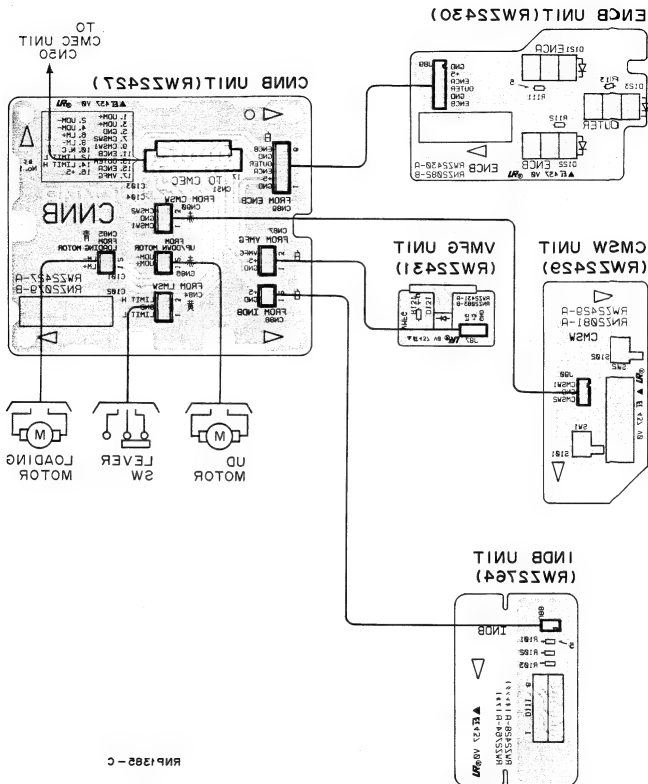




● View from soldering side



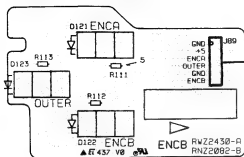
- View from soldering side



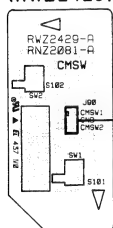
7. CNNB, CMSW, INDB, ENCB AND VMFG UNIT

• View from component side

A ENCB UNIT (RWZ2430)



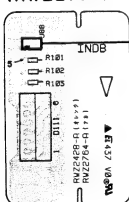
B CMSW UNIT (RWZ2429)



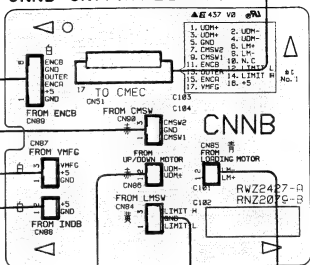
VMFG UNIT (RWZ2431)



INDB UNIT (RWZ2764)



CNNB UNIT (RWZ2427)



UD MOTOR

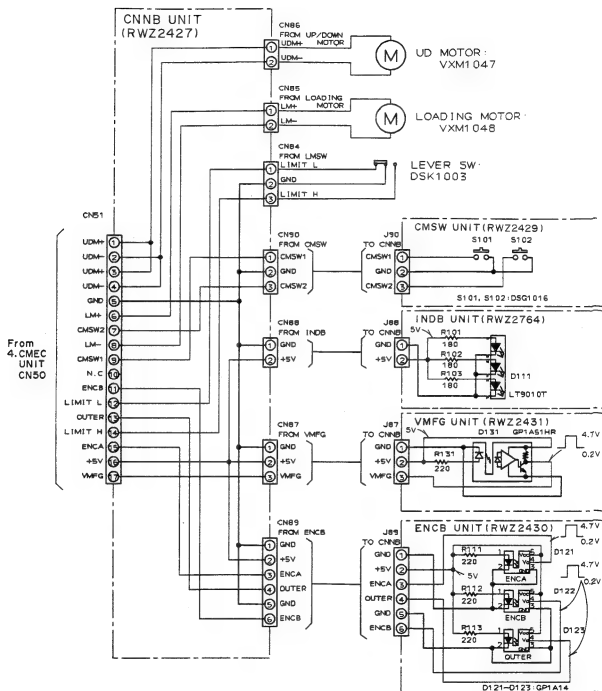


LEVER SW

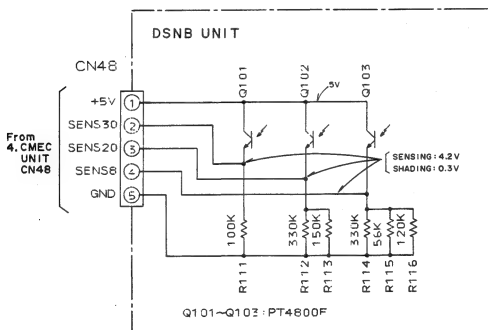
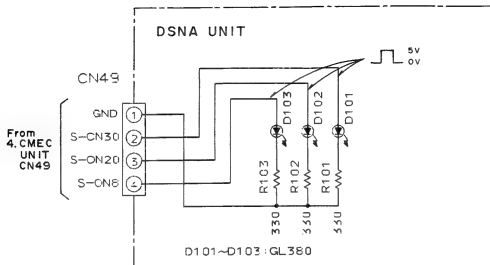


LOADING MOTOR

RNP1385 - C



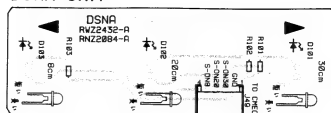
8. DSNA AND DSNB UNIT



- View from component side

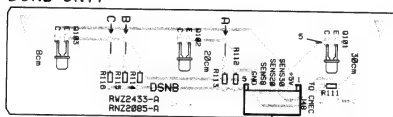
A

DSNA UNIT



B

DSNB UNIT



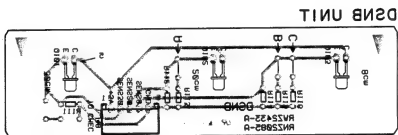
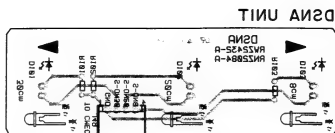
C

From
CMEC
UNIT
CN48

RNP1390-A

D

● View from soldering side

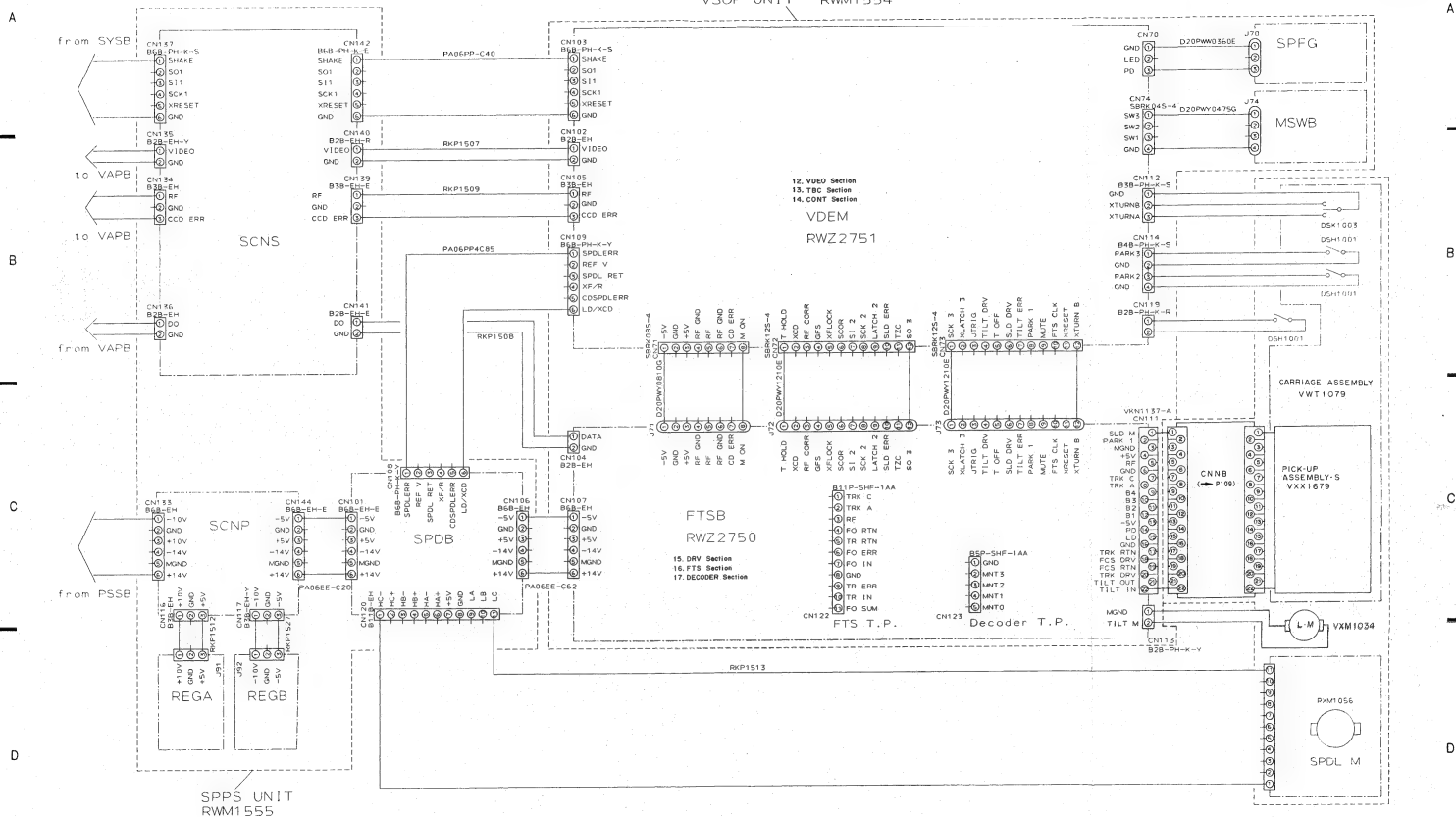


RNP1390-A

9. OVERALL WIRING DIAGRAM (CLD PLAYER SECTION) CLD-LCV200 ONLY

Note : This is the CLD player section for LC-V200/KUC.

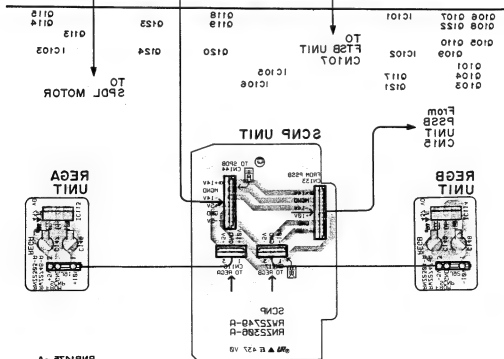
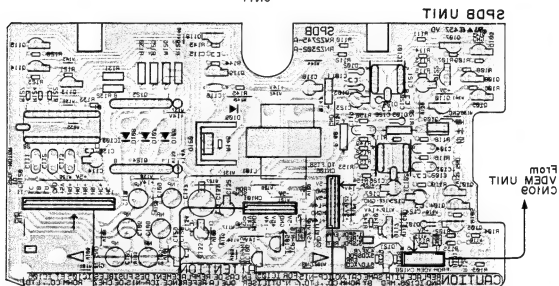
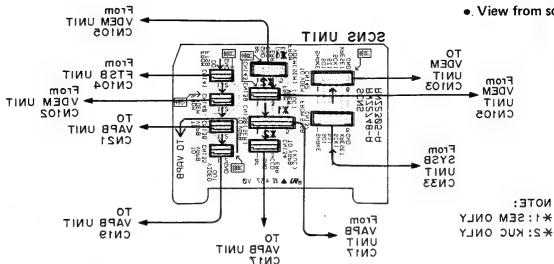
VSOP UNIT RWM1554





0

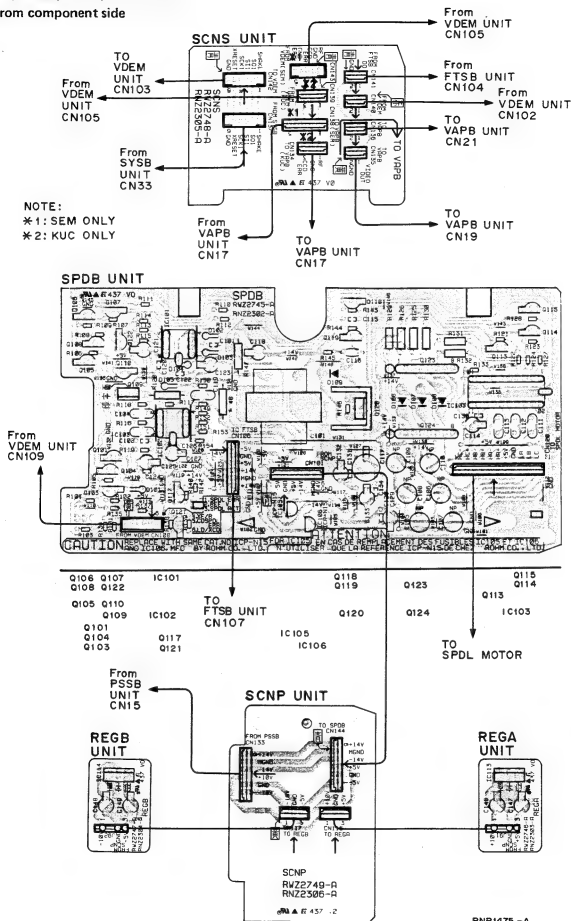
• View from soldering side

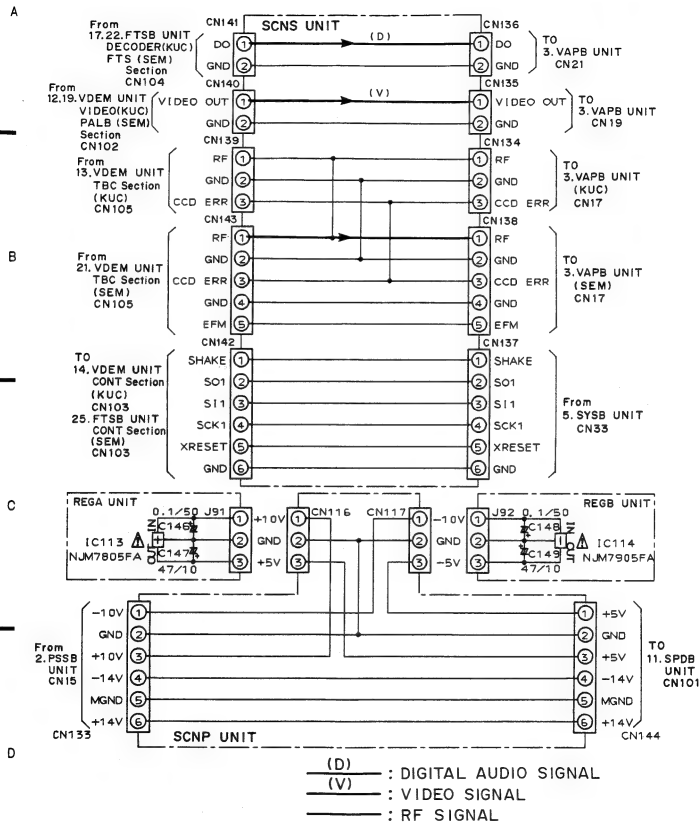


RNP175-A

11. REGA, REGB, SCNS, SCNP AND SPDB UNIT

- View from component side

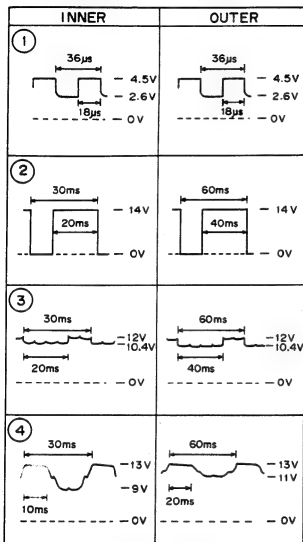




WAVEFORMS OF SPDB UNIT

*1

VOLTAGE AND WAVEFORM WHEN
PLAYING BACK CD.



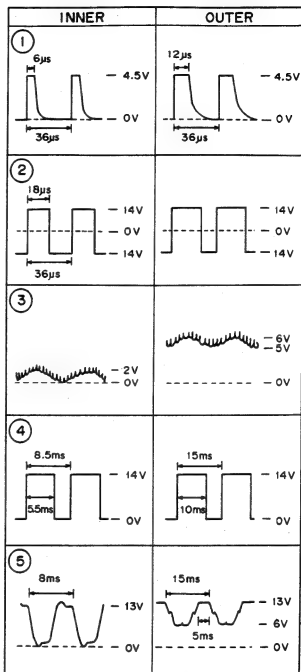
Waveform ① is the same at the inner
circumference and the outer circumference.

The periods at the inner and outer
circumference of waveforms ② to ④ change
continuously.

Those described here are reference values.

*2

VOLTAGE AND WAVEFORM WHEN
PLAYING BACK LD.



*2

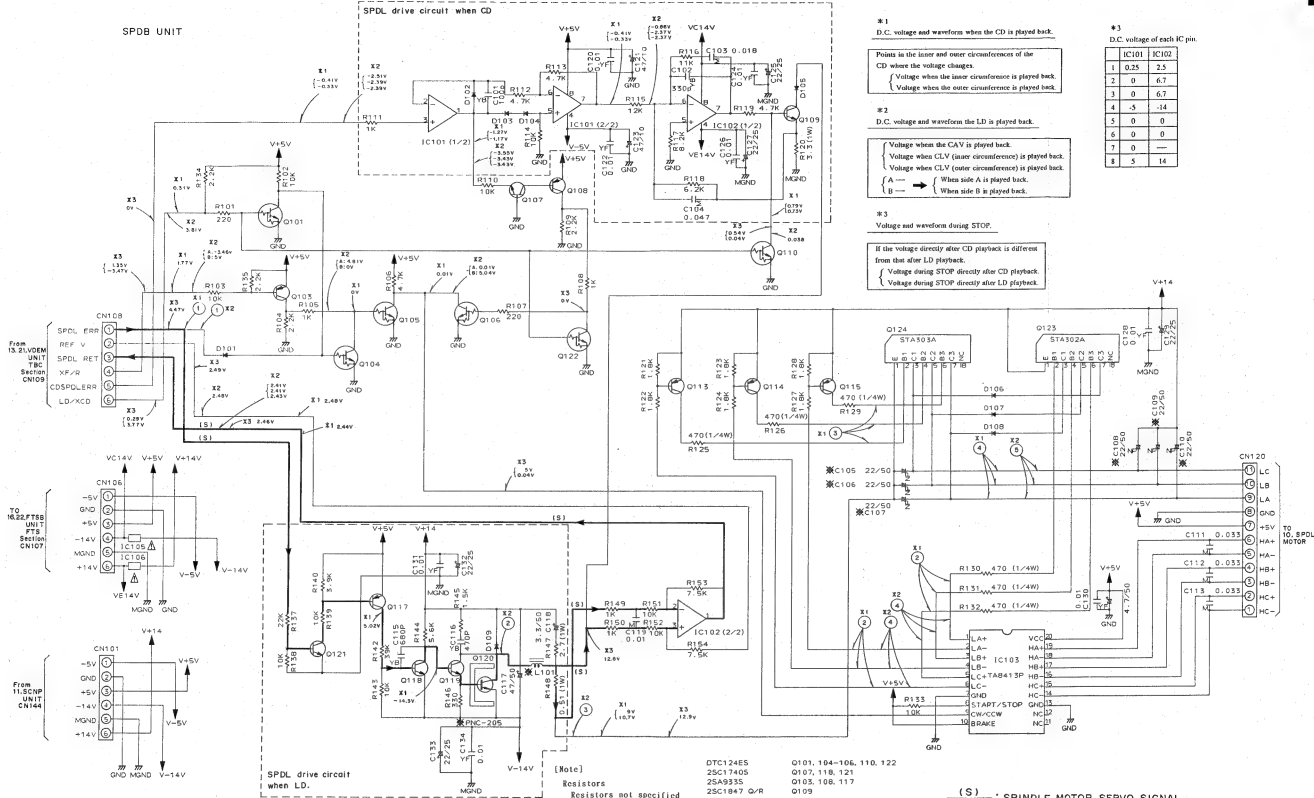
VOLTAGE AND WAVEFORM WHEN
PLAYING BACK LD.

(The voltage and waveform described here are
when 20cm CLV disc is used.

The waveform for the CAV disc is the same
as the inner circumference waveform of
the CLV disc above.)

SPDB UNIT

SPDL drive circuit when CD



#1 D.C. voltage and waveform when the CD is played back.

Points in the inner and outer circumference of the CD when the voltage changes.
(Voltage when the inner circumference is played back)
(Voltage when the outer circumference is played back)

#2 D.C. voltage and waveform when the LD is played back.

(Voltage when the CAV is played back)
(Voltage when the CLV (inner circumference) is played back)
(Voltage when the CLV (outer circumference) is played back)
A → When side A is played back.
B → When side B is played back.

#3 Voltage and waveform during STOP.

If the voltage directly after CD playback is different from that after LD playback.
(Voltage during STOP directly after CD playback)
(Voltage during STOP directly after LD playback)

#3 D.C. voltage of each IC pin.

	IC101	IC102
1	0.25	2.5
2	0	6.7
3	0	6.7
4	-3	-14
5	0	0
6	0	0
7	0	-
8	3	-14

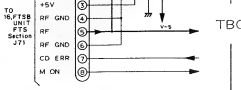
[Note]
Resistors
Resistors not specified
are 1/8W.
Capacitors
YF: CKP4UF
YB: CKP4UB or CKCYB
M: CMA

DTC124E5
25C17405
25A9335
25C1847 Q/R
25A8017
25C1627 P/Q
D119
25D1267 P/Q
155254
D101-104
11652
D105
D106-108
52K20
D109
D110, 102
BA1521B
TAB413P
IC103
ICP-N15
VCH1091-A-F

(S) : SPINDLE MOTOR SERVO SIGNAL

VDEM UNIT (RWZ2751)
•VIDEO Section

VIDEO : 12. VDEM UNIT(1/3)
TBC : 13. VDEM UNIT(2/3)
CONT : 14. VDEM UNIT(3/3)



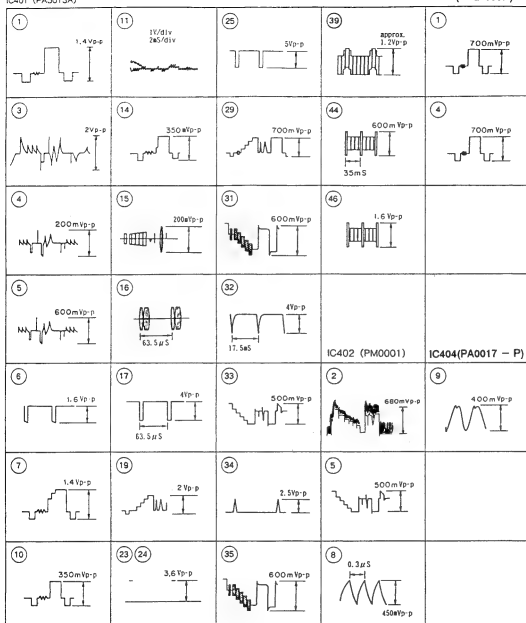
(V) : RF SIGNAL
 (S) : VIDEO SIGNAL
 SPINDLE MOTOR SERVO

WAVEFORMS OF VDEM UNIT (1/3)

VIDEO Section

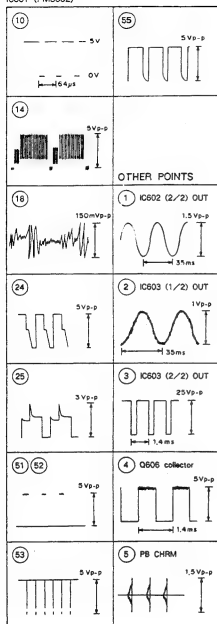
IC401 (PA5013A)

IC403(CXL1009P)



WAVEFORMS OF VDEM UNIT (2/3)
TBC Section

IC601 (PM3002)

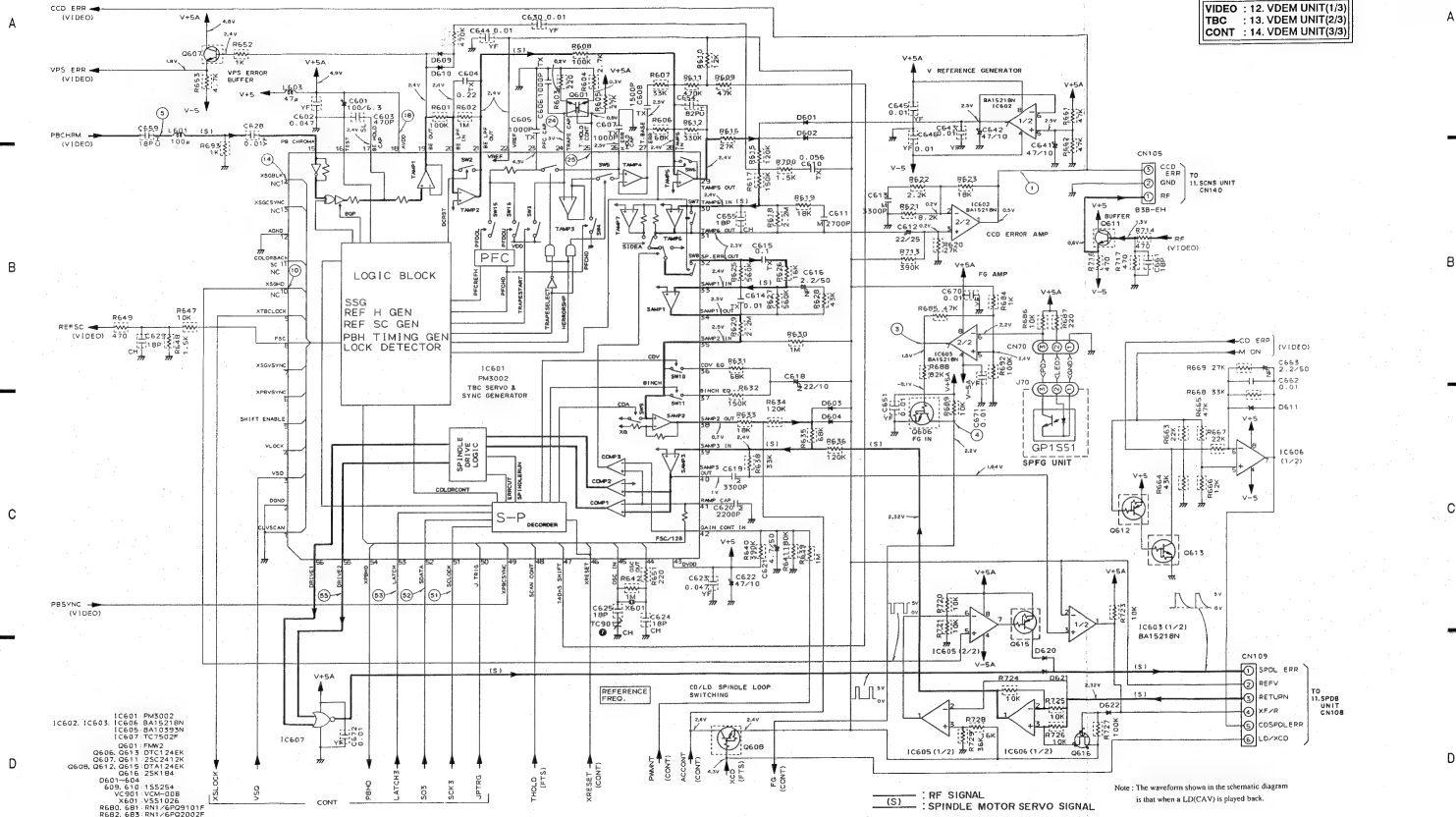


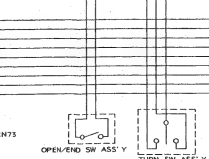
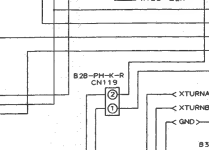
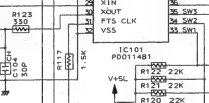
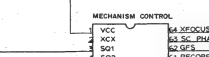
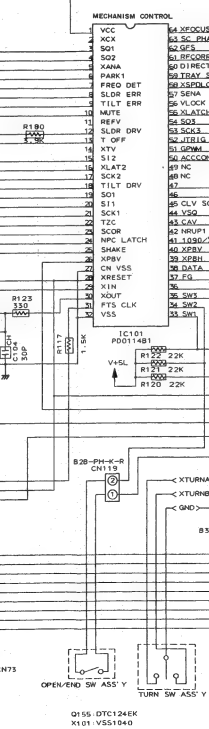
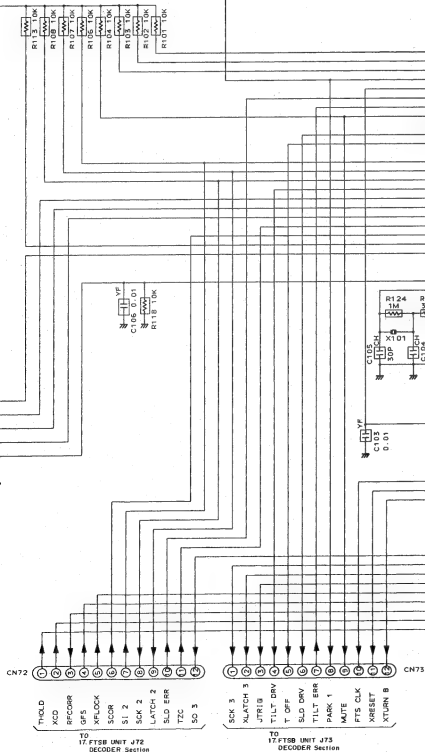
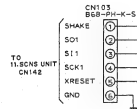
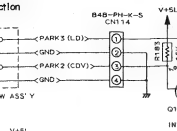
13. VDEM UNIT (2/3) AND SPFG UNIT (TBC Section)

VDEM UNIT(RWZ2751) •TBC Section

Note : Indicates connection destination of other circuit diagrams.

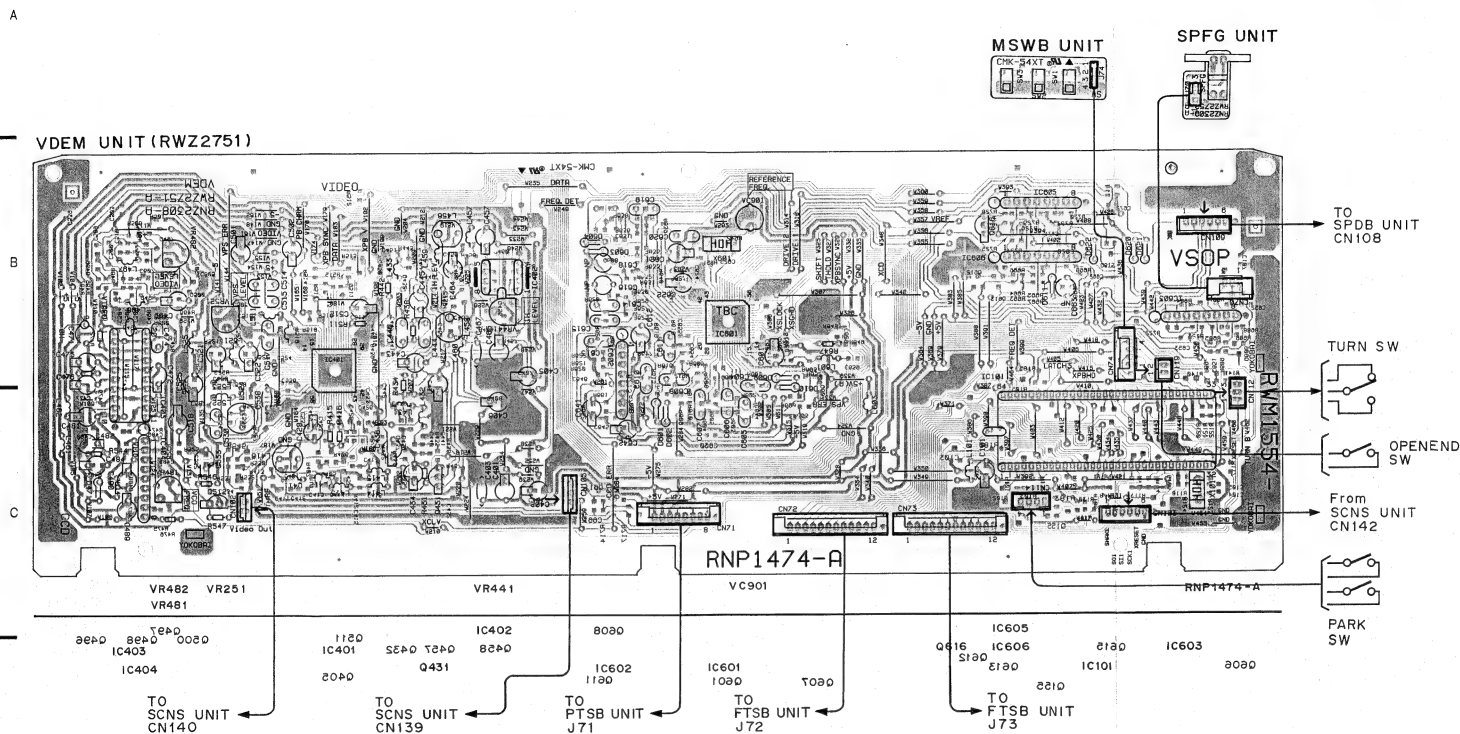
VVIDEO : 12. VDEM UNIT(1/3)
TBC : 13. VDEM UNIT(2/3)
CONT : 14. VDEM UNIT(3/3)

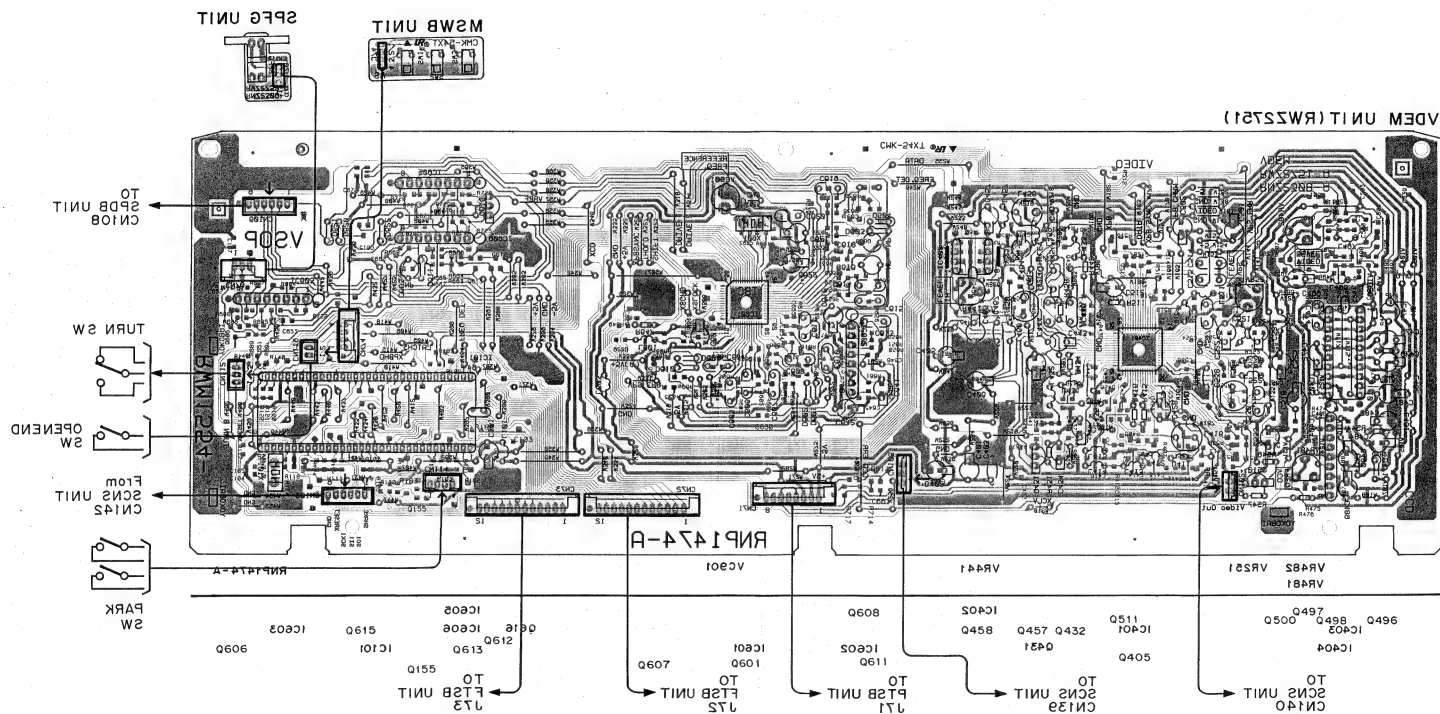




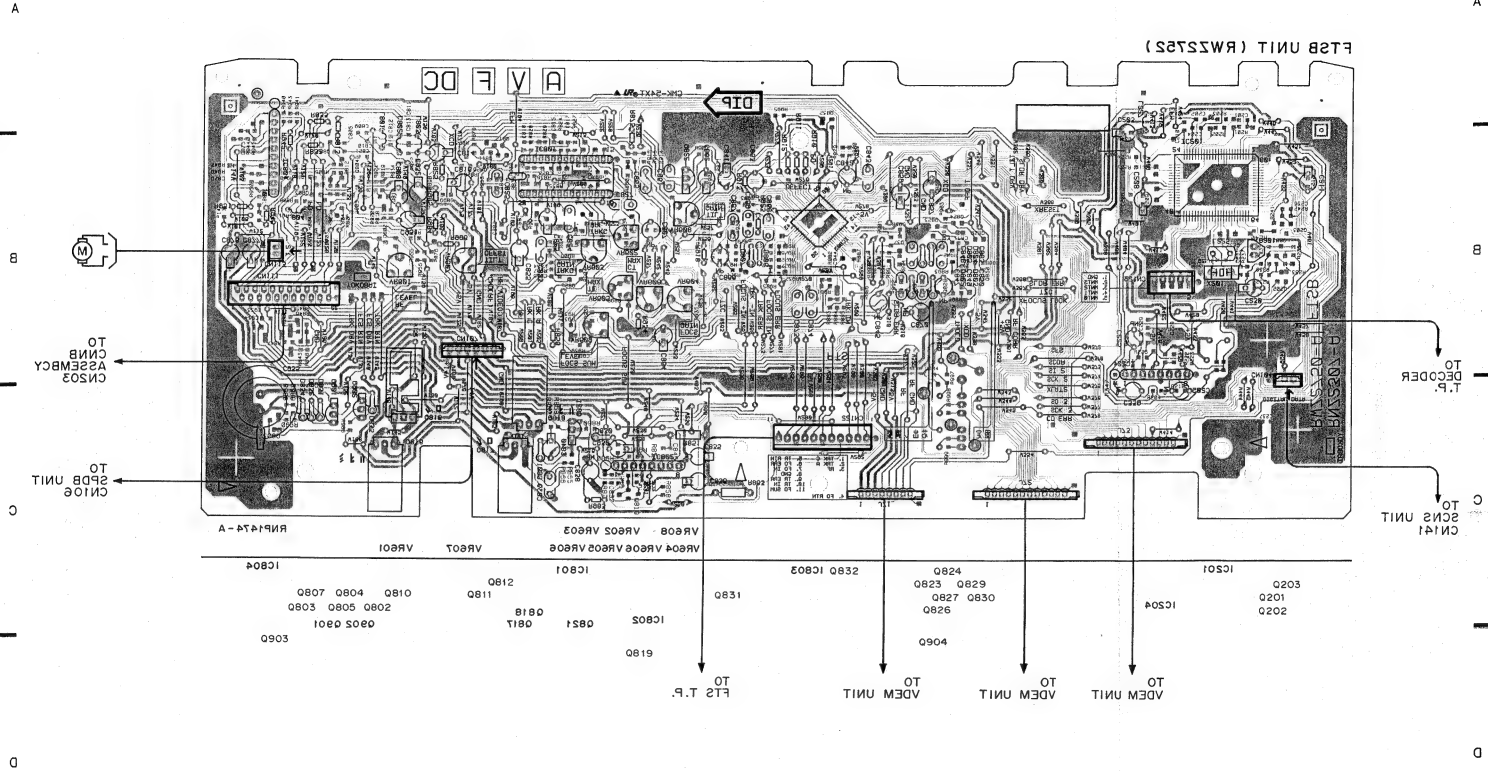
Note : Indicates connection destination of other circuit diagrams.

VIDEO : 12. VDEM UNIT(1/3)
TBC : 13. VDEM UNIT(2/3)
CONT : 14. VDEM UNIT(3/3)





- View from soldering side



LC-V200

FTSB UNIT

● View from component side

FTSB UNIT (RWZ2752)

TO DECODER
T.P.TO SCNS UNIT
CN141TO CNNB
ASSEMBLY
CN203TO SPDB UNIT
CN106

TO VDEM UNIT

TO VDEM UNIT

TO VDEM UNIT

TO FTS T.P.

VR608 VR602 VR603
VR604 VR606 VR605 VR606

VR607 VR601

RNP1474-A

IC201
80S0
10S0
S0S0

IC204

8S80
8S80
Q820
TS80
8S80

8080

8S80 IC803

1880

IC802
Q818
Q817
8180

IC801

S180
11800180 8080 T080
S080 8080 8080
Q902 Q901

8080

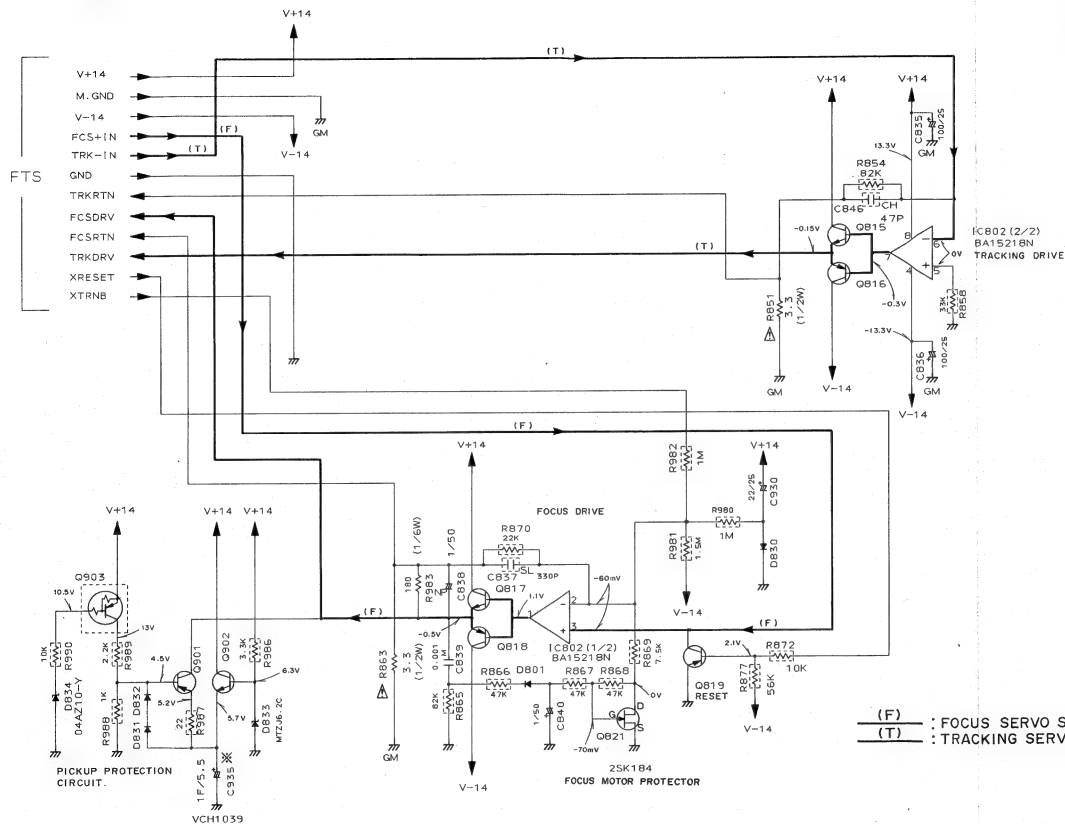
IC804

15. FTSB UNIT (1/3)
(DRV Section)

FTSB UNIT (RWZ2750)
• DRV Section

Note : Indicates connection destination
of other circuit diagrams.

DRV	: 15. FTSB UNIT(1/3)
FTS	: 16. FTSB UNIT(2/3)
DECODER	: 17. FTSB UNIT(3/3)



- D801, 830
- D831, 832 : 5S254
- Q815, 817 : 2SD1762
- Q816, 818 : 2SB1185
- Q819 : 2SA1037K
- Q821 : 2SK184
- Q901 : 2SA933S
- Q902 : 2SC1740S
- Q903 : DTA124EK

(F) : FOCUS SERVO SIGNAL
(T) : TRACKING SERVO SIGNAL

2

(c)

4

22

6

DRV : 15. FTSB UNIT(1/3)
FTS : 16. FTSB UNIT(2/3)
DECODER: 17. FTSB UNIT(3/3)



DECODEF

B

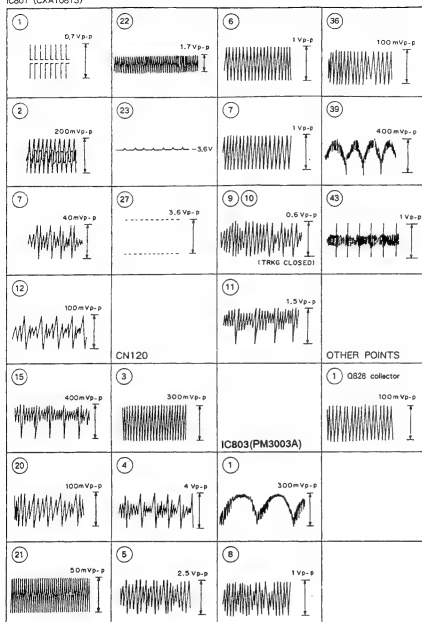
C

D

WAVEFORMS OF FTSB UNIT (2/3)

FTS Section

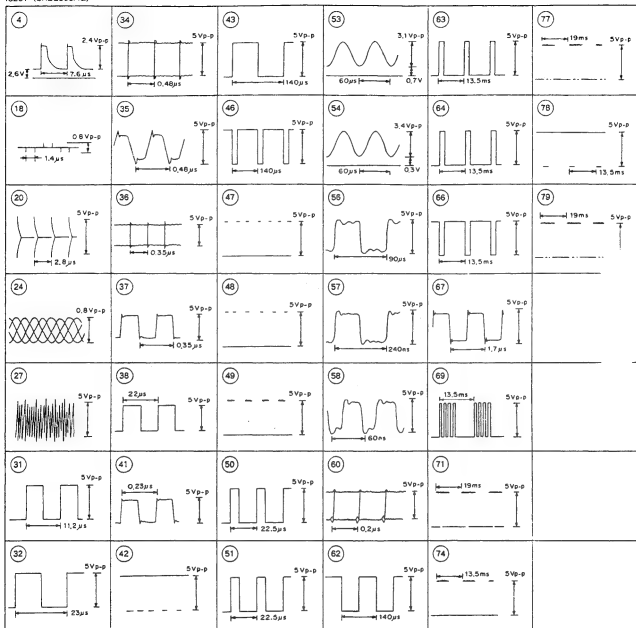
IC801 (CXA1081S)



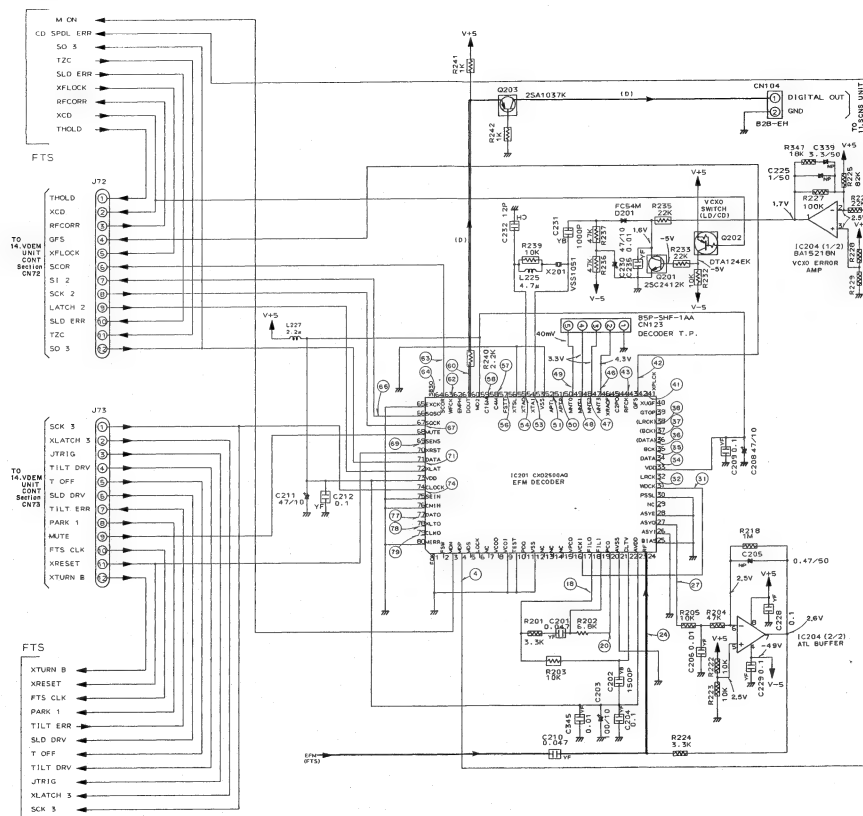
WAVEFORMS OF FTSB UNIT (3/3)

DECODER Section

IC201 (CXD2500AQ)



Note : Indicates connection destination of other circuit diagrams.

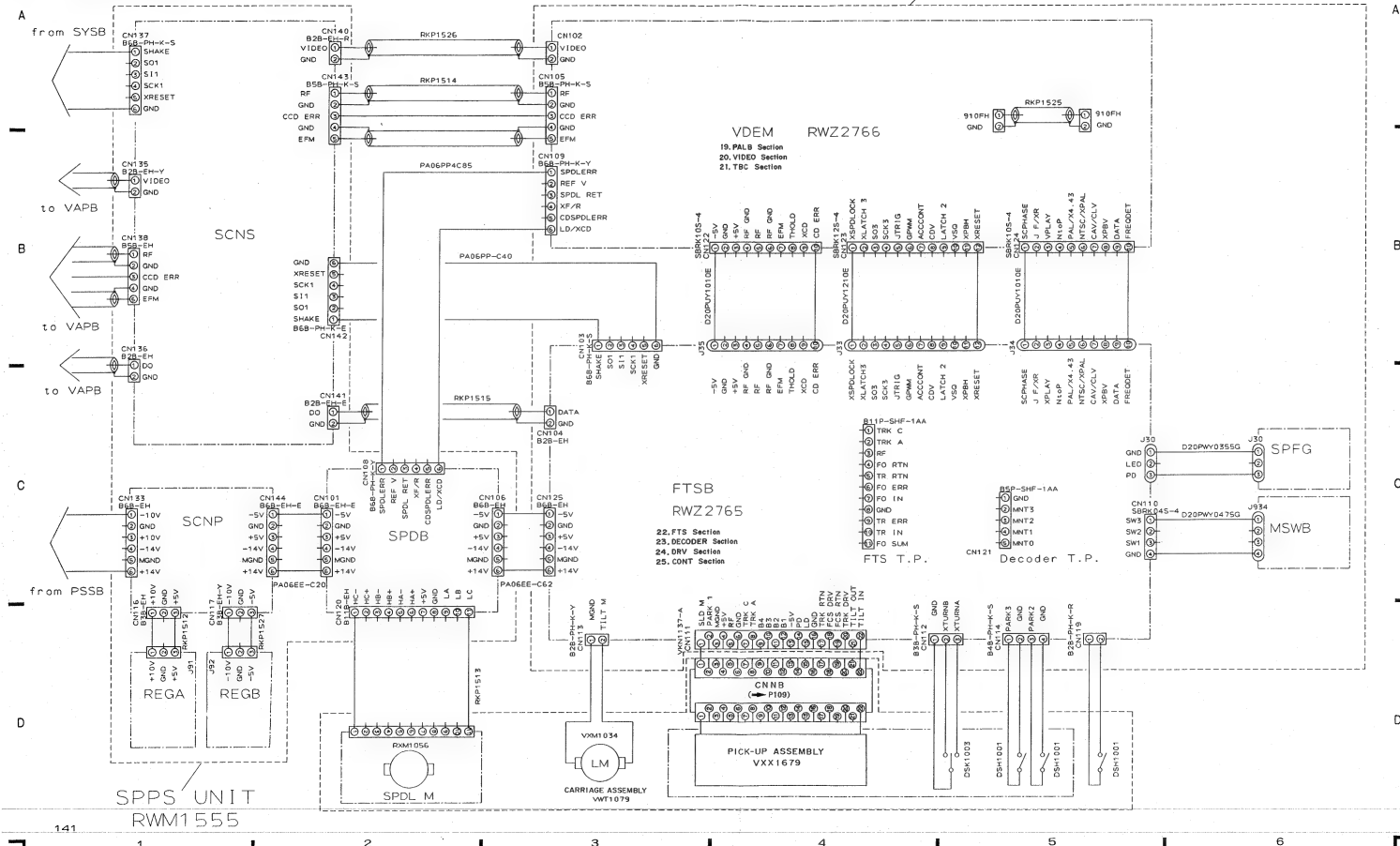


____ : RF SIGNAL
(D) _____ : DIGITAL AUDIO SIGNAL

CLD-LCV100 ONLY

Note : This is the CLD player section for LC-V100/SEM.

VSOP UNIT RWM1563



a

5

4

8

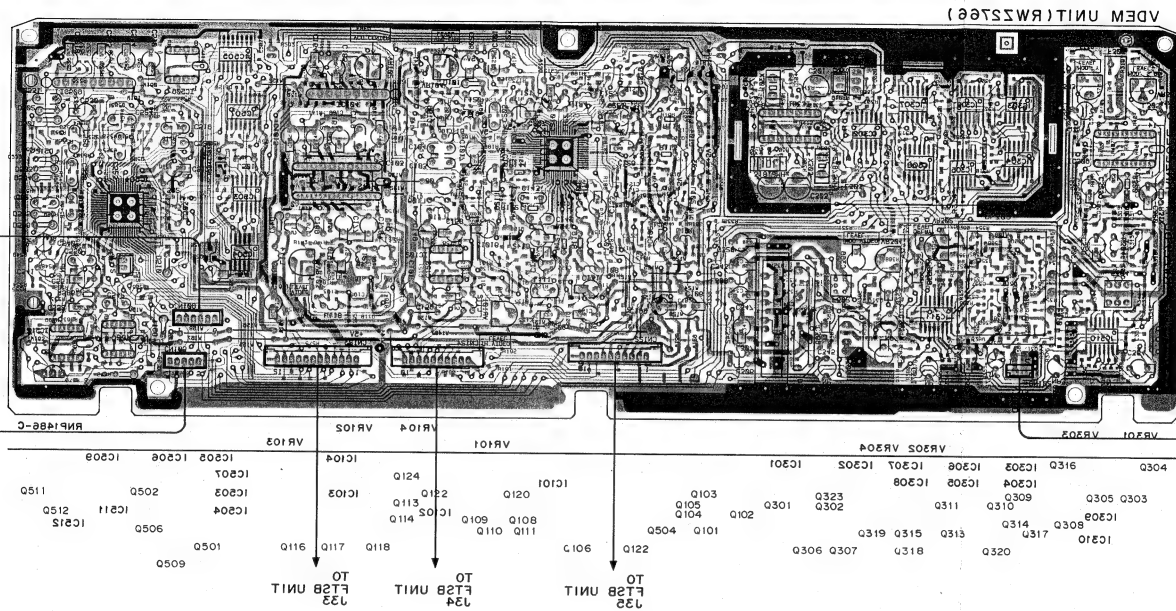
144

a

3

4

TO
SCNS
UNIT
C CH140



VDEM UNIT (RW5266)

TO
SPDB
UNIT
CN108

UNIT
SCS
TO

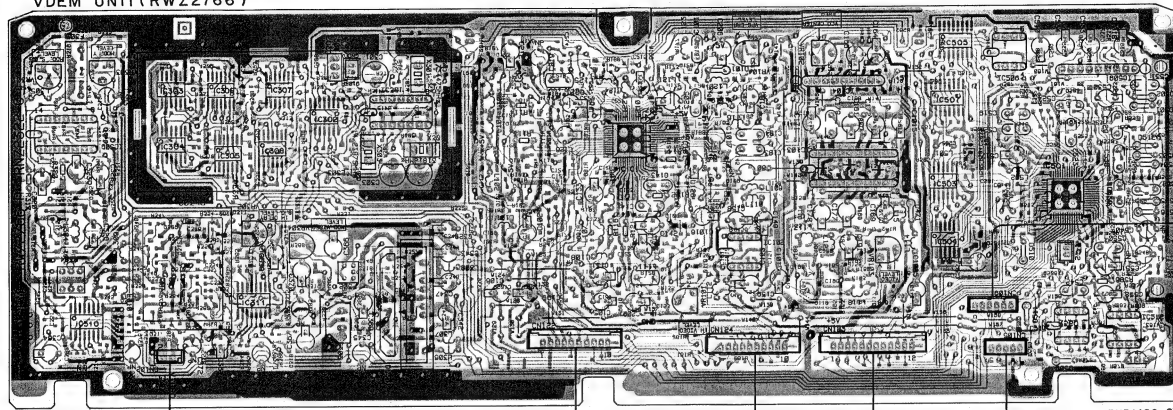
a

LC-V100

VDEM UNIT

• View from component side

VDEM UNIT(RWZ2766)



VR301 VR303

VR302 VR304

VR101

VR104

VR102

VR103

RNP1486-C

IC303 IC306 IC307 IC302 IC301
 IC304 IC305 IC308
 IC309 IC310
 IC303 IC306 IC307 IC302 IC301
 IC304 IC305 IC308
 IC309 IC310

IC101

AS10

IC104

IC505

IC506

IC509

S020

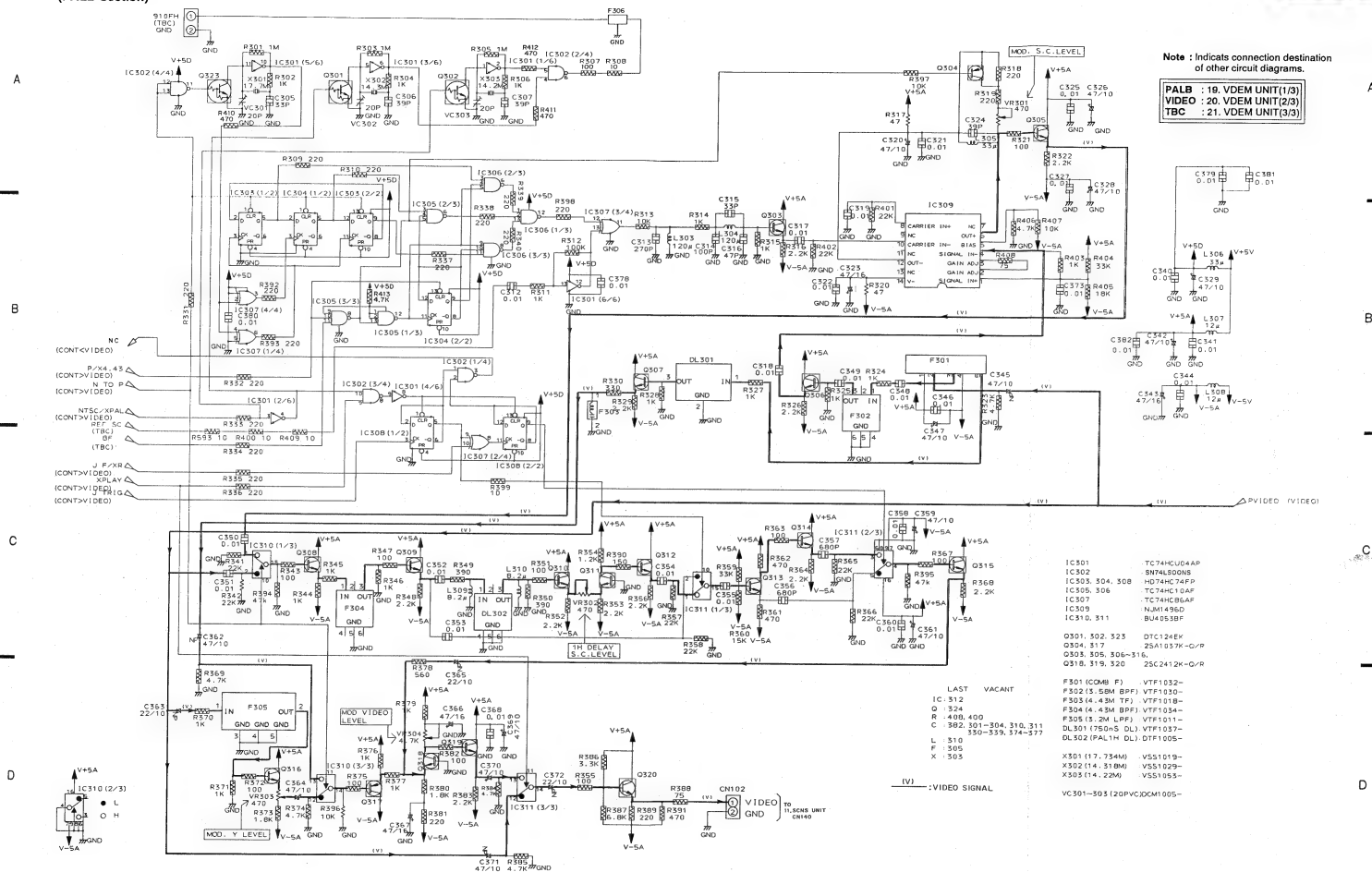
IC511

S120

IC512

TO
FTSB UNIT
J35TO
FTSB UNIT
J34TO
FTSB UNIT
J33TO
SPDB
UNIT
CN108TO
SCNS
UNIT
CN105

19. VDEM UNIT (1/3) (PALB Section)





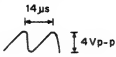

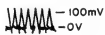
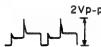



VIDEO SECTION

Note: (No.) in the table correspond to the pin No.

IC101 (PA5013A)				IC104 (PA0017~P)
①	⑭	⑲	④⑥	⑨
③	⑮	⑳		
④	⑯	㉑	IC102 (PM0001)	
			②	
⑤	⑰	㉒	⑤	
⑧	⑱	㉓	⑧	
⑦	㉔	㉕		
⑩	㉖	㉖	IC103(CXL1009P)	
			①	
⑪	㉗	㉗	④	

Note : (No) in the table correspond to the pin No.

TBC SECTION

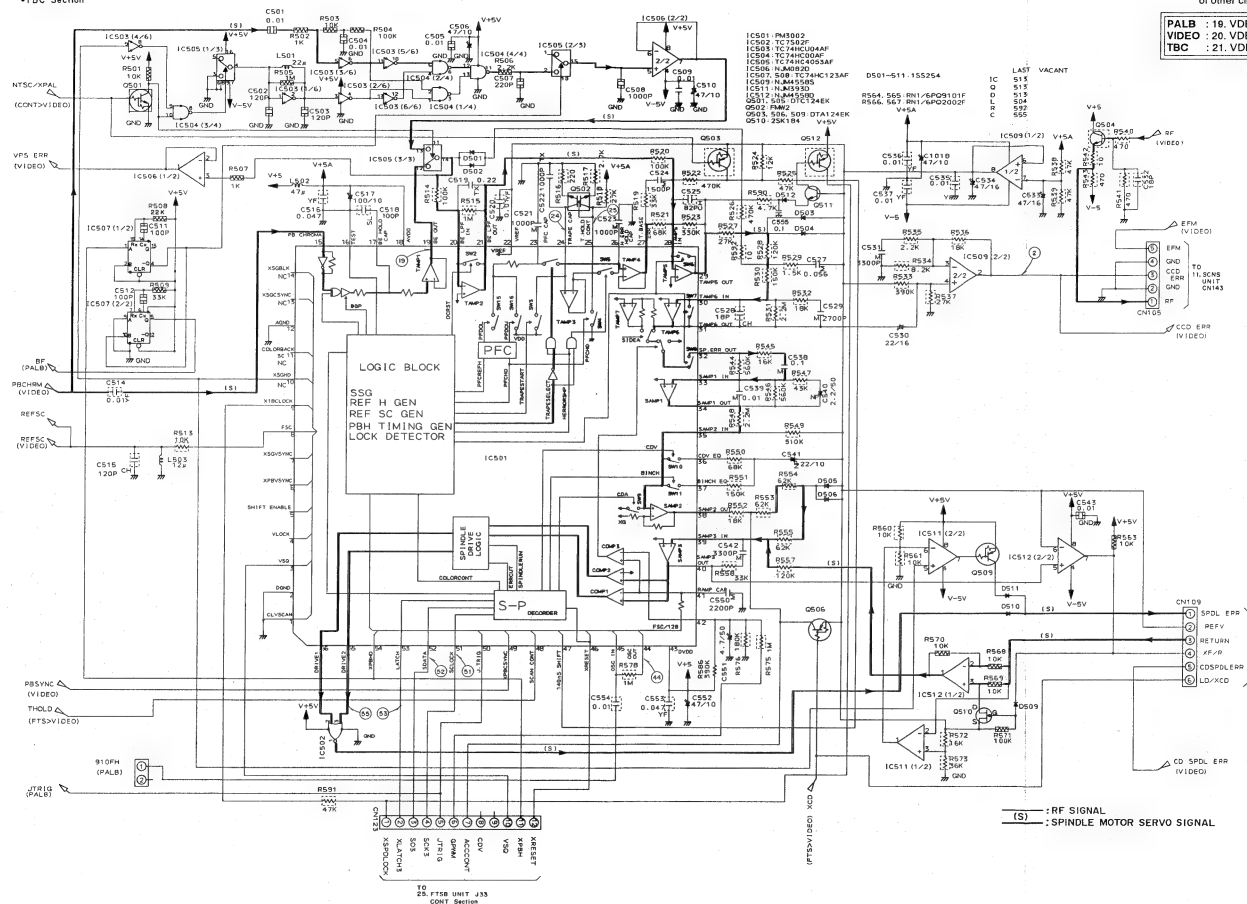
IC501(PM3002)		IC509(NJM4558S)
<p>(19)</p>  <p>300mVp-p</p>	<p>(51)</p>  <p>5Vp-p 22.5µs</p>	<p>(2)</p>  <p>14µs 4Vp-p</p>
<p>(24)</p>  <p>5Vp-p</p>	<p>(52)</p>  <p>-100mV -0V</p>	
<p>(25)</p>  <p>2Vp-p</p>	<p>(53)</p>  <p>5Vp-p</p>	
<p>(44)</p>  <p>4Vp-p</p>	<p>(55)</p>  <p>5Vp-p</p>	

21. VDEM UNIT (3/3)
(TBC Section)

VDEM UNIT(RW22766)
•TBC Section

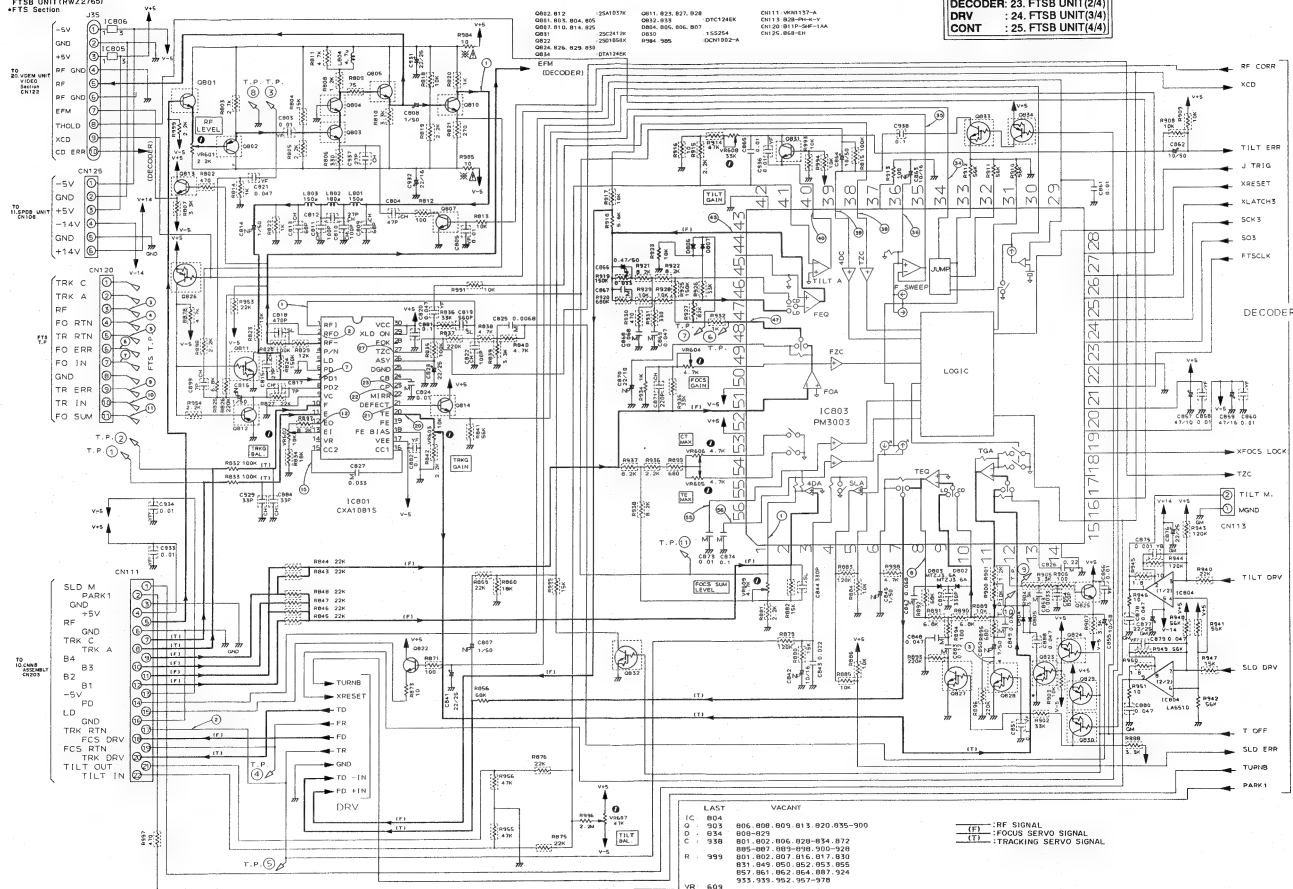
Note : Indicates connection destination
of other circuit diagrams.

PALB : 19. VDEM UNIT(1/3)
VIDEO : 20. VDEM UNIT(2/3)
TBC : 21. VDEM UNIT(3/3)



22. FTSB UNIT (1/4) (FTS Section)

FTSB UNIT(RW22765)
+FTS Section



Note : Indicates connection destination
of other circuit diagrams.

FTS : 22. FTSB UNIT(1/4)
DECODER : 23. FTSB UNIT(2/4)
DRV : 24. FTSB UNIT(3/4)
CONT : 25. FTSB UNIT(4/4)

IC 804
D 903
D 834
R 930
R 939
R 938
R 937
R 936
R 935
R 934
R 933
R 932
R 931
R 930
R 929
R 928
R 927
R 926
R 925
R 924
R 923
R 922
R 921
R 920
R 919
R 918
R 917
R 916
R 915
R 914
R 913
R 912
R 911
R 910
R 909
R 908
R 907
R 906
R 905
R 904
R 903
R 902
R 901
R 900
R 899
R 898
R 897
R 896
R 895
R 894
R 893
R 892
R 891
R 890
R 889
R 888
R 887
R 886
R 885
R 884
R 883
R 882
R 881
R 880
R 879
R 878
R 877
R 876
R 875
R 874
R 873
R 872
R 871
R 870
R 869
R 868
R 867
R 866
R 865
R 864
R 863
R 862
R 861
R 860
R 859
R 858
R 857
R 856
R 855
R 854
R 853
R 852
R 851
R 850
R 849
R 848
R 847
R 846
R 845
R 844
R 843
R 842
R 841
R 840
R 839
R 838
R 837
R 836
R 835
R 834
R 833
R 832
R 831
R 830
R 829
R 828
R 827
R 826
R 825
R 824
R 823
R 822
R 821
R 820
R 819
R 818
R 817
R 816
R 815
R 814
R 813
R 812
R 811
R 810
R 809
R 808
R 807
R 806
R 805
R 804
R 803
R 802
R 801
R 800
R 799
R 798
R 797
R 796
R 795
R 794
R 793
R 792
R 791
R 790
R 789
R 788
R 787
R 786
R 785
R 784
R 783
R 782
R 781
R 780
R 779
R 778
R 777
R 776
R 775
R 774
R 773
R 772
R 771
R 770
R 769
R 768
R 767
R 766
R 765
R 764
R 763
R 762
R 761
R 760
R 759
R 758
R 757
R 756
R 755
R 754
R 753
R 752
R 751
R 750
R 749
R 748
R 747
R 746
R 745
R 744
R 743
R 742
R 741
R 740
R 739
R 738
R 737
R 736
R 735
R 734
R 733
R 732
R 731
R 730
R 729
R 728
R 727
R 726
R 725
R 724
R 723
R 722
R 721
R 720
R 719
R 718
R 717
R 716
R 715
R 714
R 713
R 712
R 711
R 710
R 709
R 708
R 707
R 706
R 705
R 704
R 703
R 702
R 701
R 700
R 699
R 698
R 697
R 696
R 695
R 694
R 693
R 692
R 691
R 690
R 689
R 688
R 687
R 686
R 685
R 684
R 683
R 682
R 681
R 680
R 679
R 678
R 677
R 676
R 675
R 674
R 673
R 672
R 671
R 670
R 669
R 668
R 667
R 666
R 665
R 664
R 663
R 662
R 661
R 660
R 659
R 658
R 657
R 656
R 655
R 654
R 653
R 652
R 651
R 650
R 649
R 648
R 647
R 646
R 645
R 644
R 643
R 642
R 641
R 640
R 639
R 638
R 637
R 636
R 635
R 634
R 633
R 632
R 631
R 630
R 629
R 628
R 627
R 626
R 625
R 624
R 623
R 622
R 621
R 620
R 619
R 618
R 617
R 616
R 615
R 614
R 613
R 612
R 611
R 610
R 609
R 608
R 607
R 606
R 605
R 604
R 603
R 602
R 601
R 600
R 599
R 598
R 597
R 596
R 595
R 594
R 593
R 592
R 591
R 590
R 589
R 588
R 587
R 586
R 585
R 584
R 583
R 582
R 581
R 580
R 579
R 578
R 577
R 576
R 575
R 574
R 573
R 572
R 571
R 570
R 569
R 568
R 567
R 566
R 565
R 564
R 563
R 562
R 561
R 560
R 559
R 558
R 557
R 556
R 555
R 554
R 553
R 552
R 551
R 550
R 549
R 548
R 547
R 546
R 545
R 544
R 543
R 542
R 541
R 540
R 539
R 538
R 537
R 536
R 535
R 534
R 533
R 532
R 531
R 530
R 529
R 528
R 527
R 526
R 525
R 524
R 523
R 522
R 521
R 520
R 519
R 518
R 517
R 516
R 515
R 514
R 513
R 512
R 511
R 510
R 509
R 508
R 507
R 506
R 505
R 504
R 503
R 502
R 501
R 500
R 499
R 498
R 497
R 496
R 495
R 494
R 493
R 492
R 491
R 490
R 489
R 488
R 487
R 486
R 485
R 484
R 483
R 482
R 481
R 480
R 479
R 478
R 477
R 476
R 475
R 474
R 473
R 472
R 471
R 470
R 469
R 468
R 467
R 466
R 465
R 464
R 463
R 462
R 461
R 460
R 459
R 458
R 457
R 456
R 455
R 454
R 453
R 452
R 451
R 450
R 449
R 448
R 447
R 446
R 445
R 444
R 443
R 442
R 441
R 440
R 439
R 438
R 437
R 436
R 435
R 434
R 433
R 432
R 431
R 430
R 429
R 428
R 427
R 426
R 425
R 424
R 423
R 422
R 421
R 420
R 419
R 418
R 417
R 416
R 415
R 414
R 413
R 412
R 411
R 410
R 409
R 408
R 407
R 406
R 405
R 404
R 403
R 402
R 401
R 400
R 399
R 398
R 397
R 396
R 395
R 394
R 393
R 392
R 391
R 390
R 389
R 388
R 387
R 386
R 385
R 384
R 383
R 382
R 381
R 380
R 379
R 378
R 377
R 376
R 375
R 374
R 373
R 372
R 371
R 370
R 369
R 368
R 367
R 366
R 365
R 364
R 363
R 362
R 361
R 360
R 359
R 358
R 357
R 356
R 355
R 354
R 353
R 352
R 351
R 350
R 349
R 348
R 347
R 346
R 345
R 344
R 343
R 342
R 341
R 340
R 339
R 338
R 337
R 336
R 335
R 334
R 333
R 332
R 331
R 330
R 329
R 328
R 327
R 326
R 325
R 324
R 323
R 322
R 321
R 320
R 319
R 318
R 317
R 316
R 315
R 314
R 313
R 312
R 311
R 310
R 309
R 308
R 307
R 306
R 305
R 304
R 303
R 302
R 301
R 300
R 299
R 298
R 297
R 296
R 295
R 294
R 293
R 292
R 291
R 290
R 289
R 288
R 287
R 286
R 285
R 284
R 283
R 282
R 281
R 280
R 279
R 278
R 277
R 276
R 275
R 274
R 273
R 272
R 271
R 270
R 269
R 268
R 267
R 266
R 265
R 264
R 263
R 262
R 261
R 260
R 259
R 258
R 257
R 256
R 255
R 254
R 253
R 252
R 251
R 250
R 249
R 248
R 247
R 246
R 245
R 244
R 243
R 242
R 241
R 240
R 239
R 238
R 237
R 236
R 235
R 234
R 233
R 232
R 231
R 230
R 229
R 228
R 227
R 226
R 225
R 224
R 223
R 222
R 221
R 220
R 219
R 218
R 217
R 216
R 215
R 214
R 213
R 212
R 211
R 210
R 209
R 208
R 207
R 206
R 205
R 204
R 203
R 202
R 201
R 200
R 199
R 198
R 197
R 196
R 195
R 194
R 193
R 192
R 191
R 190
R 189
R 188
R 187
R 186
R 185
R 184
R 183
R 182
R 181
R 180
R 179
R 178
R 177
R 176
R 175
R 174
R 173
R 172
R 171
R 170
R 169
R 168
R 167
R 166
R 165
R 164
R 163
R 162
R 161
R 160
R 159
R 158
R 157
R 156
R 155
R 154
R 153
R 152
R 151
R 150
R 149
R 148
R 147
R 146
R 145
R 144
R 143
R 142
R 141
R 140
R 139
R 138
R 137
R 136
R 135
R 134
R 133
R 132
R 131
R 130
R 129
R 128
R 127
R 126
R 125
R 124
R 123
R 122
R 121
R 120
R 119
R 118
R 117
R 116
R 115
R 114
R 113
R 112
R 111
R 110
R 109
R 108
R 107
R 106
R 105
R 104
R 103
R 102
R 101
R 100
R 99
R 98
R 97
R 96
R 95
R 94
R 93
R 92
R 91
R 90
R 89
R 88
R 87
R 86
R 85
R 84
R 83
R 82
R 81
R 80
R 79
R 78
R 77
R 76
R 75
R 74
R 73
R 72
R 71
R 70
R 69
R 68
R 67
R 66
R 65
R 64
R 63
R 62
R 61
R 60
R 59
R 58
R 57
R 56
R 55
R 54
R 53
R 52
R 51
R 50
R 49
R 48
R 47
R 46
R 45
R 44
R 43
R 42
R 41
R 40
R 39
R 38
R 37
R 36
R 35
R 34
R 33
R 32
R 31
R 30
R 29
R 28
R 27
R 26
R 25
R 24
R 23
R 22
R 21
R 20
R 19
R 18
R 17
R 16
R 15
R 14
R 13
R 12
R 11
R 10
R 9
R 8
R 7
R 6
R 5
R 4
R 3
R 2
R 1
R 0

FTS SECTION

Note: (No.) in the table correspond to the pin No.

IC801 (CXA1081S)		CN120		IC803 (PM3003A)		Other points					
(1)		(20)		(3)		(36)		(1) Q810 Collector			
(2)		(21)		(4)		(8)		(40)		(2) CN111 Pin 17	
(7)		(22)		(5)		(34)		(43)		(3) Q828 Collector	
(12)		(23)		(8)		(35)		(47)		(4) CN111 Pin 18	
(15)		(27)		(7)		(36)		(55)		(5) CN111 Pin 19	
				(9)		(38)		(56)		(6) IC804 Pin 9	
				(10)							
				(11)							

DECODER SECTION

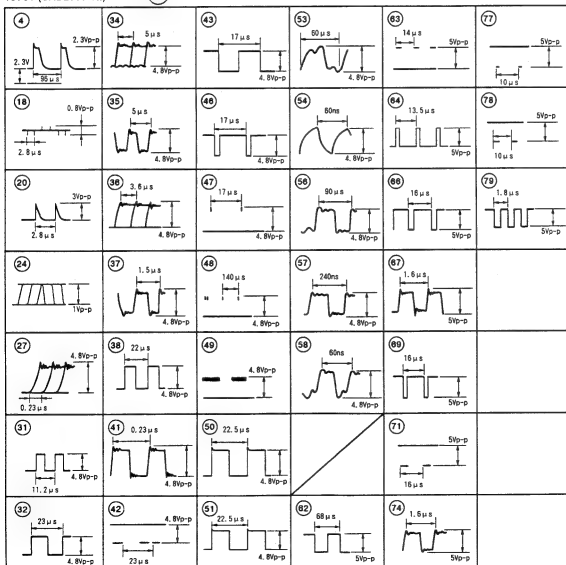
Note: Waveforms and voltages are at the PLAY.

IC701 (CXD2500AQ)

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	0	15	0	29	0	43	*	57	*	71	*
2	0	16	4.8	30	0	44	0	58	*	72	5
3	0	17	0	31	*	45	4.8	59	5	73	5
4	*	18	*	32	*	46	*	60	*	74	*
5	0	19	2.4	33	4.8	47	*	61	5	75	0
6	4.8	20	*	34	*	48	*	62	*	76	0
7	0	21	0	35	*	49	*	63	*	77	*
8	4.8	22	2.3	36	*	50	*	64	*	78	*
9	0	23	4.8	37	*	51	*	65	0	79	*
10	0	24	*	38	*	52	0	66	*	80	0
11	0	25	0	39	0	53	*	67	*		
12	0	26	0	40	4.8	54	*	68	0		
13	0	27	*	41	*	55	0	69	*		
14	0	28	0	42	*	56	*	70	5		

*: Refer to waveforms

IC701 (CXD2500AQ) Note: (No.) in the table correspond to the pin No.

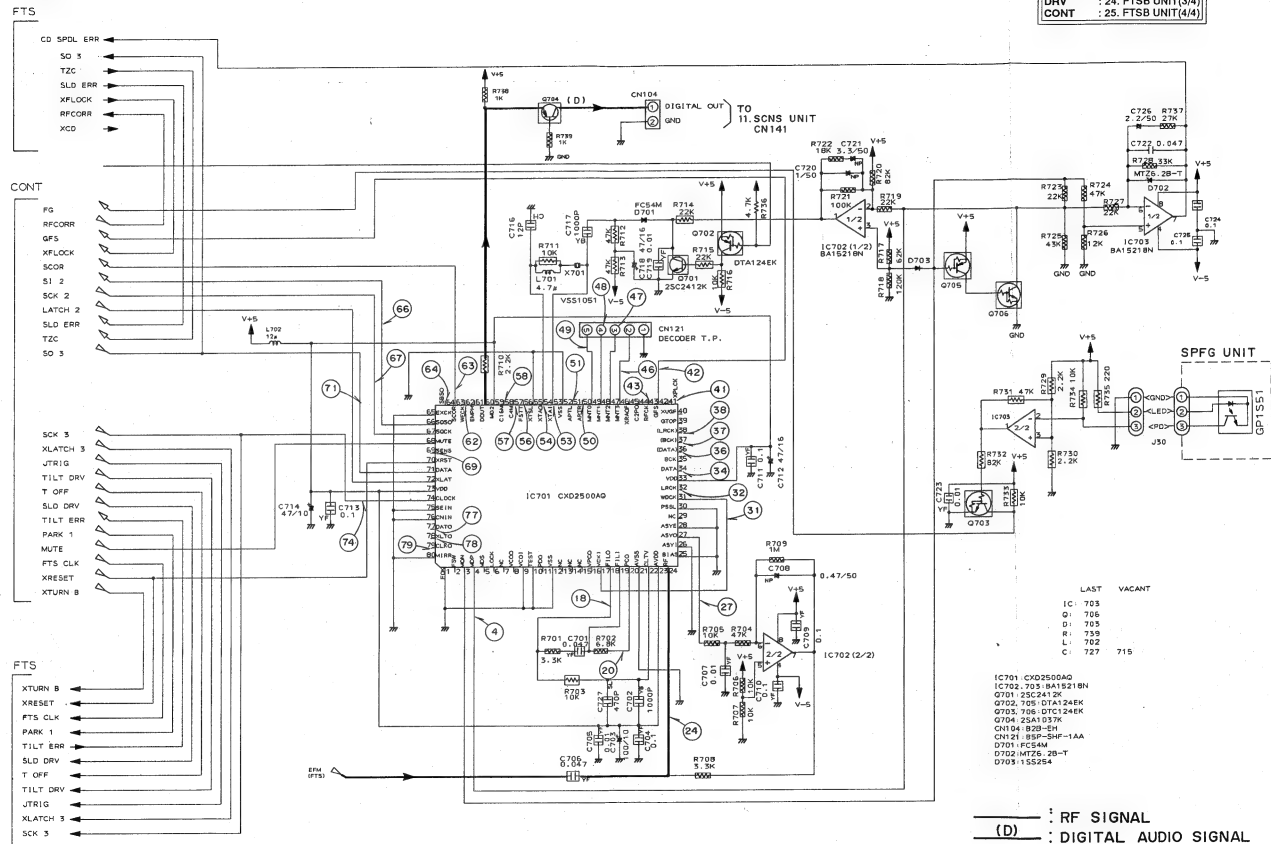


23. FTSB AND SPFG UNIT (2/4)
(DECODER Section)

FTSB UNIT(RWZ2765)
•DECODER Section

Note : Indicates connection destination
of other circuit diagrams.

FTS : 22. FTSB UNIT(1/4)
DECODER: 23. FTSB UNIT(2/4)
DRV : 24. FTSB UNIT(3/4)
CONT : 25. FTSB UNIT(4/4)



RF SIGNAL
(D) : DIGITAL AUDIO SIGNAL

12

- DRY Section

A

E

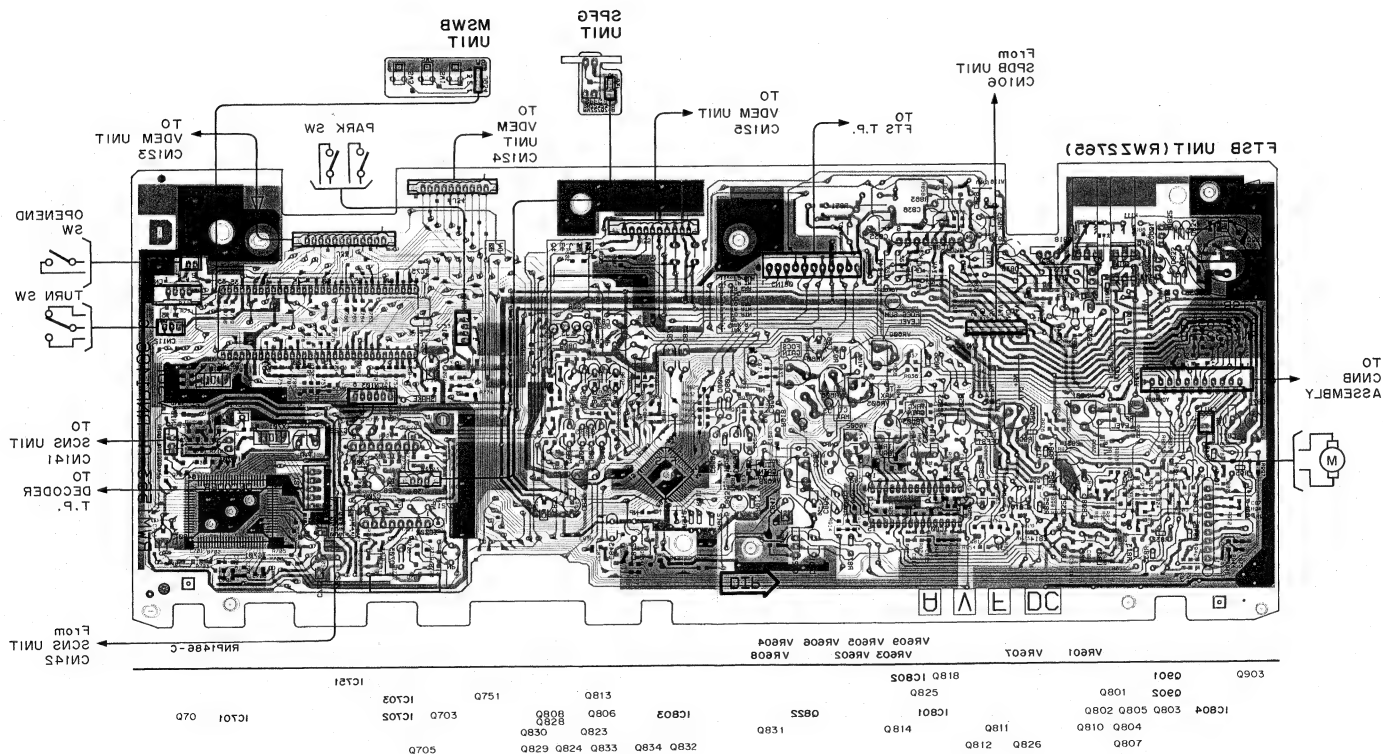
2

(F) : FOCUS SERVO SIGNAL
(T) : TRACKING SERVO SIGNAL



C

- View from soldering side



25. FTSB AND MSWB UNIT (4/4)
(CONT Section)

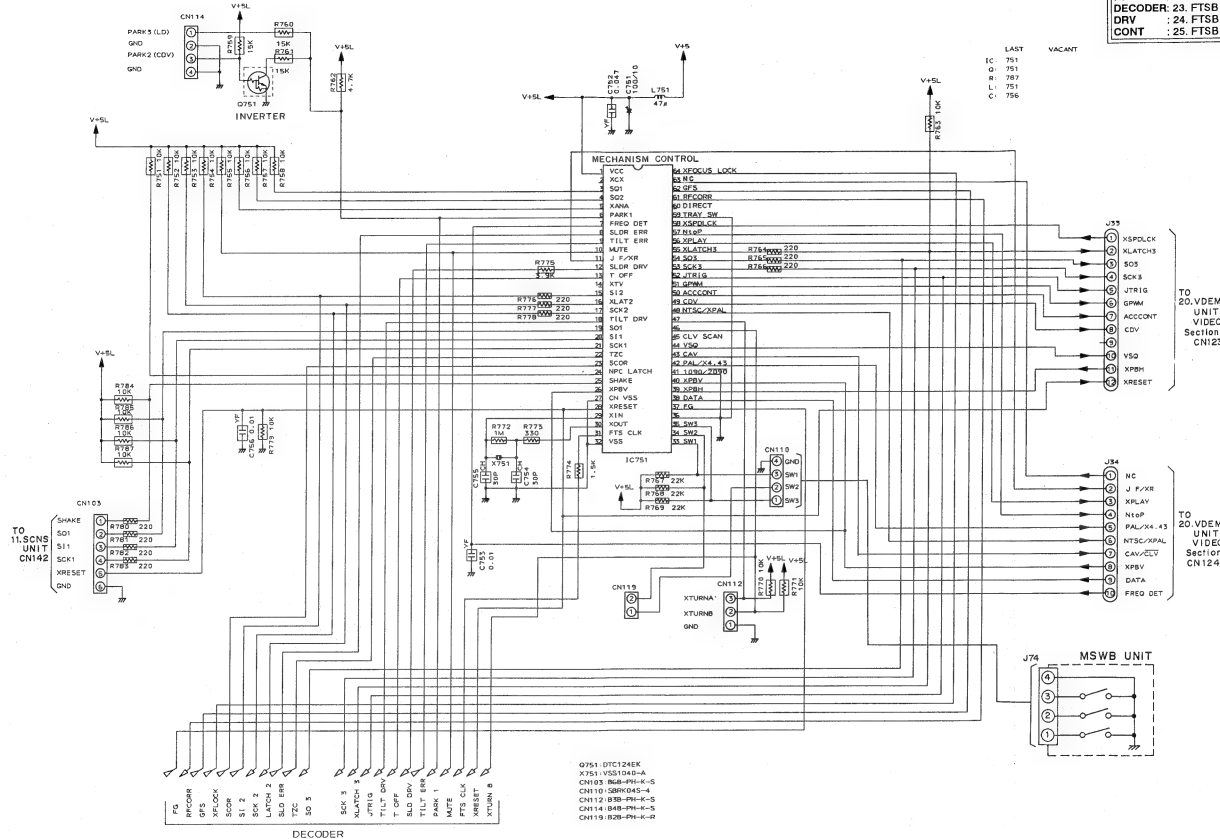
FTSB UNIT (RWZ2765)
•CONT Section

Note : Indicat connection destination
of other circuit diagrams.

```

FTS      : 22. FTSB UNIT(1/4)
DECODER: 23. FTSB UNIT(2/4)
DRV      : 24. FTSB UNIT(3/4)
CONT     : 25. FTSB UNIT(4/4)

```



Q751: DTC124EK
X751: VSS1040-A
CN103: B6B-PH-K-5
CN110: SBRK04S-4
CN112: B3B-PH-K-5
CN114: B4B-PH-K-5
CN119: B2B-PH-K-5

6. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "O" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω \rightarrow 56 $\times 10^1 \rightarrow$ 561 RD1/RPM **561J**

47k Ω \rightarrow 47 $\times 10^3 \rightarrow$ 473 RD1/4PS **473J**

0.5 Ω \rightarrow 0R5 RN2H **0R5K**

1 Ω \rightarrow 010 RSIP **010K**

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω \rightarrow 562 $\times 10^1 \rightarrow$ 5621 RN1/4PC **5621F**

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST OF ASSEMBLIES							
○	YAPB UNIT	RWG1006 (LC-V200/KUC type)	NSP	DSNA UNIT	RWZ2432		
		RWG1007 (LC-V100/SEM type)	NSP	DSNB UNIT	RWZ2433		
		RWG1008 (LC-V200/KUC type)	○	SSSB UNIT	RWZ2769		
		RWG1009 (LC-V100/SEM type)	○	DISP UNIT	RWZ2770		
		RWG1010	NSP	PSPB UNIT	RWZ2754 (LC-V200/KUC type)		
○	CMEC UNIT	RWG1008 (LC-V200/KUC type)			RWZ2773 (LC-V100/SEM type)		
		RWG1009 (LC-V100/SEM type)	○	PSSB UNIT	RWZ2755 (LC-V200/KUC type)		
		RWG1010			RWZ2774 (LC-V100/SEM type)		
○	CIOB UNIT	RWN1554 (LC-V200/KUC type)	NSP	SSTB UNIT	RWZ2756 (LC-V200/KUC type)		
		RWN1563 (LC-V100/SEM type)			RWZ2775 (LC-V100/SEM type)		
○	YTOP UNIT	RWZ2750 (LC-V200/KUC type)	NSP	MTPB UNIT	RWZ2757 (LC-V200/KUC type)		
		RWZ2765 (LC-V100/SEM type)			RWZ2776 (LC-V100/SEM type)		
○	FTSB UNIT	RWZ2751 (LC-V200/KUC type)	NSP	MTSB UNIT	RWZ2758 (LC-V200/KUC type)		
		RWZ2766 (LC-V100/SEM type)			RWZ2777 (LC-V100/SEM type)		
○	YDEM UNIT	RWZ2752 (LC-V200/KUC type)	NSP	FUSB UNIT	RWZ2779 (LC-V200/KUC type)		
		RWZ2767 (LC-V100/SEM type)			RWZ2778 (LC-V100/SEM type)		
NSP	SPFG UNIT	RWZ2753 (LC-V200/KUC type)	NSP	CNNB ASSEMBLY	YWG1194		
		RWZ2768 (LC-V100/SEM type)	NSP	HEAD ASSEMBLY	YWF1178		
			NSP	SEMB ASSEMBLY	YWF1295		
NSP	MSWB UNIT	RWZ2753 (LC-V200/KUC type)					
		RWZ2768 (LC-V100/SEM type)					
○	SPFS UNIT	RWN1555					
NSP	SPDB UNIT	RWZ2745					
NSP	RBGA UNIT	RWZ2746					
NSP	RBGB UNIT	RWZ2747					
NSP	SCNS UNIT	RWZ2748					
NSP	SCNP UNIT	RWZ2749					
○	MECB UNIT	RWN1562					
○	CNNB UNIT	RWZ2427					
○	CNEW UNIT	RWZ2429					
○	ENCB UNIT	RWZ2430					
○	YMEG UNIT	RWZ2431					
○	INDB UNIT	RWZ2764					
SEMICONDUCTORS							
		IC204, IC205, IC505			BA15218		
		IC607			BU2040		
		IC501, IC502, IC701			BU4053B		
		IC401			HA12127ANT		
		IC202			IC1883K		
		IC702			MS0555-05SGSP		
		IC601			NJN7805FA		
		IC602			NJN7808FA		
		IC604			NJN78M05FA		

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
Δ	IC803		NJN7908FA		C414, C424, C448, C461		CCCSL221J50
					C704		CCCSL330J50
Δ	IC505		NJN78M05FA		C734		CCCSL470J50
	IC201		P00052		C423, C445		CEANP100M16
	IC704		TCT4HC02AP				
	IC808		TCT4HC02AP		C416, C452, C455		CEANP220M10
	IC103		TCT4HC04AP		C409		CEAS10M50 (LC-V100/SEM only)
	IC703		TCT4HC04AP		C425, C462, C602, C608, C607, C710		CEAS10M50
Δ	Q602		2SA1286		C131, C202, C205, C210, C212, C429,		CEAS10M10
	Q405, Q407		2SA933S		C432, C465, C501-C504, C511, C512,		
			(LC-V100/SEM only)		C610, C611, C613, C701, C702, C706,		
	Q400, Q401, Q404, Q701, Q703,		2SA933S		C707, C709, C720, C732, C733, C736		
	Q712, Q716, Q718						
	Q702, Q704, Q705, Q711, Q713, Q714,		25C1740S		C216-C219, C222, C223, C228, C229,		CEAS220M50
	Q717, Q719				C444, C457, C519, C520		
Δ	Q601		25C3243		C604, C605		CEAS222M25
	Q505, Q506		25D2144S		C204		CEAS222M50
	Q409, Q413		25X184		C214, C730		CEAS31M6R3
			(LC-V100/SEM only)		C412, C413, C446, C447		CEAS470M10
	Q402, Q403		XDA124ES		C608, C609, C703, C705		CEAS470M16
			(LC-V100/SEM only)		C729, C731		CEAS471M6R3
	Q512		XDA124ES		C480		CEAS47M50
	Q603		XDA144ES		C428		CEAS47M50
	Q408, Q410-Q412, Q707		XDC124ES		C410		CFTXA103J50
			(LC-V100/SEM only)				
	Q511, Q706, Q707		XDC124ES		C207, C454		CFTXA104J50
					C421, C459		CFTXA152J50
	Q604		XDC144ES		C420, C458		CFTXA472J50
Δ	D601-D604		11ES2		C427, C464		CFTXA473J50
	D400-D404, D406		1SS254		C426, C463		CFTXA822J50
			(LC-V100/SEM only)				
	D203, D407, D408, D701		1SS254		C132, C134		GCCTF473250
	D101, D201, D202		MT26-2C		C201, C203, C206, C713		GCCTX104M16
					C411, C419, C431, C435, C453, C456		CKCXB102K50
					C711		CKCXB152K50
					C714		CKCXB472K50
COILS/TRANSFORMERS							
	L104, L201, L203, L400, L601, L702		LAU101K		C180, C209, C211, C213, C403-C408,		CKCYP103250
	L701		LAU390J		C801, C812, C814, C815, C708, C719,		
	L401		LAU470J		C723, C774		
	L202, L402, L703		LAU560J		C469-C471		CKCYP103250
	F401		VTF103S		(LC-V100/SEM only)		CKCYP473250
			(LC-V100/SEM only)				CKCYP473250
	F402		VTF1036		C137, C138, C215, C603, C712		QMA592J50
			(LC-V100/SEM only)		C220, C221		QMA592J50
	F403		VTF1047		C224-C227		QMA561J50
CAPACITORS							
	C721		CCCH1010C50		VC701 (20p)		YCM-008
	C717, C718		CCCH1000D50		VC702 (20p)		YCM-008
	C422, C460		CCCH101J50				(LC-V100/SEM only)
	C722		CCCH120J50				
	C401		(LC-V100/SEM only)				
	C418		CCCH121J50				
			CCCH150J50				
			(LC-V100/SEM only)				
	C450		CCCH180J50				
	C417		CCCH220J50				
	C208, C400		CCCH390J50				
	C451		CCCH430J50				
	C402		(LC-V100/SEM only)				
			CCCH910J50				
	C415, C449		CCCSL221J50				
			(LC-V100/SEM only)				

RESISTORS

R607	RA9T223J
R131, R134	RD1/6PM272J
R412	RD1/6PM222J
	(LC-V100/SEM only)
R415-R418	RD1/6PM102J
	(LC-V100/SEM only)
R419	RD1/6PM103J
	(LC-V100/SEM only)
R420	RD1/6PM221J
	(LC-V100/SEM only)
R424	RD1/6PM752J
	(LC-V100/SEM only)
R426, R446	RD1/6PM125J
	(LC-V100/SEM only)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	R432		RD1/6PM132J (LC-V100/SEM only)		C144		CEAS222M2.5
	R442		RD1/6PM175J (LC-V100/SEM only)		C116		CEAS470M1.0
					C136		CEAS470M1.6
	R445		RD1/6PM302J (LC-V100/SEM only)		C114		CFTAA474J5H
					C125, C126		CGCYF104Z25
	R712		RD1/6PM105J (LC-V100/SEM only)		C110, C115, C119, C128, C130, C133, C137, C139-C141		CKCYF103Z5K
	OTHER RESISTORS		RD1/6PM□□□J		C107, C112		QOMA152J50
					C103		QOMA222J50
					C113, C120, C121		QOMA392J50
					C109, C117, C118		QOMA393J50
OTHERS					C134 (6800/35)		RCH1063
	JA701 1P PIN JACK		RKB1008		C135 (6800/25)		RCH1064
	X702 CRYSTAL RESONATOR (17.734MHz)		VSS1019 (LC-V100/SEM only)		C129		CEAS221M10
	X701 CRYSTAL RESONATOR (F=14.31)		VSS1026				
CMEC UNIT				RESISTORS			
SEMICONDUCTORS					R195		RA4T222J
	IC104, IC107, IC109, IC116, IC117		BA10393		R167, R177, R179, R186		RS1LF222J
	IC105, IC106		BA15218		R171, R173, R181, R184		RS2LF102J
	IC102		NJM082D		R183		RS2LF222J
△	IC115		NJMT812FA		R242		RS2PMF221J
	IC101		NJU4053BD		OTHERS RESISTORS		RD1/6PM□□□J
	IC114		PD4360C	OTHERS			
△	IC111, IC112		TA7291P		CN202, CN204 6P TOP POST		B6P-SHF
	IC110		TC4001BP		CN203 8P TOP POST		B8P-SHF
	IC103		TC4011BP		CN50 CONNECTOR 17P		SLEW17S
	IC108		TC4023BP		X101 CERAMIC RESONATOR (F=4.19MHz)		VSS1014
	Q101, Q103, Q105, Q112, Q120, Q125, Q130, Q142, Q148, Q144, Q145		2SA933S	CI0B UNIT			
△	Q127, Q128		2SB1185	SEMICONDUCTORS			
	Q102, Q104, Q110, Q111, Q122, Q126, Q129, Q134, Q137		2SC1740S		IC101		SN751798P
△	Q135, Q136, Q146, Q147		2SD1762		Q102		2SA933S
	Q107, Q109, Q115		XDA144ES		Q101		2SC1740S
	Q106, Q108, Q113, Q114, Q116, Q123, Q124, Q131-Q133, Q138		XDC114ES		Q202		2SC1741S
	Q121		XDC144ES		D201		1SS252
	D134		1SS252		D101-D109		1SS254
	D101-D107, D109, D114, D118, D120, D123		1SS254	SWITCH			
△	D110-D113		D1NL20		S1		VSH1007
△	D121, D122		D3SBA20	RELAYS			
	D116		MTZ10B		RY201, RY202		RSR1027
	D115		MTZ11B	COILS/TRANSFORMERS			
	D108		MTZ5, 1B		L101		LPA221J
	D128-D132		MTZ8, 2B	CAPACITORS			
	D136		SEL3110S		C209		CCCSL470J50
	D135		SEL3410ELC05		C101, C108		CEAS101M10
	D119		SEL3910ALC05		C103, C107, C111		CKCYF103Z50
					C102		CKCYF223Z50
					C104, C105, C207, C208		CKCYF473Z50
COILS/TRANSFORMERS					C208-C206		QOMA102J50
	L101		LFA221J	RESISTORS			
CAPACITORS					ALL RESISTORS		RD1/6PM□□□J
	C104		CCCSL221J50	OTHERS			
	C105		CEANP4R7W25		JA3 D-SUB SOCKET 9P		DKN1051
	C101, C108		CEAS010M50		JA2 D-SUB SOCKET 9P		DKN1076
	C102, C111, C122, C123, C302		CEAS100M50		JA1 JACK 6P		VKB1025
	C106		CEAS220M16				

Mark	No.	Description	Part No.
------	-----	-------------	----------

CNNB UNIT
OTHERS

CWS1 CONNECTOR 17P

SLEM17R

CMSW UNIT
SWITCHES

S101, S102

DSG1016

ENCB UNIT
SEMICONDUCTORS

D121-D123

GP1A14

RESISTORS

ALL RESISTORS

RD1/6PM□□□J

VMFG UNIT
SEMICONDUCTORS

D131

GP1A51HR

RESISTORS

ALL RESISTORS

RD1/6PM□□□J

DSNA UNIT
SEMICONDUCTORS

D101-D103

GL380

RESISTORS

ALL RESISTORS

RD1/6PM□□□J

OTHERS

SENSOR HOLDER

RNV1795

DSNB UNIT
SEMICONDUCTORS

Q101-Q103

PT4800F

RESISTORS

ALL RESISTORS

RD1/6PM□□□J

OTHERS

SENSOR HOLDER

RNV1753

SPDB UNIT
SEMICONDUCTORS

 IC101, IC102
 IC105, IC106
 IC103
 Q113-Q115
 Q103, Q108, Q117

 BA15218
 1CP-N15
 TA8413P
 2SA817
 2SA933S

 Q119
 Q107, Q118, Q121
 Q109
 Q120
 Q101, Q104-Q106, Q110, Q122

 2SC1627
 2SC1740S
 2SC1847
 2SD1267
 DTC124ES

 Q123
 Q124
 D105
 D101-D104
 D109

 STA302A
 STA303A
 11ES2
 1SS254
 S2K20

Mark	No.	Description	Part No.
------	-----	-------------	----------

D106-D108

SSV10-4002P7.5

COILS/TRANSFORMERS

L101

YTT-070

CAPACITORS

 C125, C127, C129, C132, C133
 C138
 C121, C123
 C137
 C114

 CEAS220M25
 CEAS3R3M50
 CEAS470M10
 CEAS470M50
 CEAS4R7M50

 C116
 C101
 C102
 C115
 C120, C122, C124, C126, C128, C130,
 C131, C134

 CKCYB471K50
 CKPUB101K50
 CKPUB331K50
 CKPUB681K50
 CKPUTF103225

 C119
 C103
 C111-C113
 C104
 C106-C110 C= 22, V(DC)= 50.

 .MA103J50
 CQMA183J50
 CQMA333J50
 CQMA473J50
 VCH1091

RESISTORS

 R125, R126-R132
 R149-R154
 R147
 R120
 R148

 RD1/4LF□□□J
 RN1/6P□□□□□F
 RSLME2R7J
 RSLME3R3J
 RSLMFRS1J

OTHER RESISTORS

RD1/6PM□□□J

REGA UNIT
SEMICONDUCTORS

IC113

NJM7805FA

CAPACITORS

 C147
 C146

 CEAS470M10
 CEASR10M50

REGB UNIT
SEMICONDUCTORS

IC114

NJM7905FA

CAPACITORS

 C149
 C148

 CEAS470M10
 CEASR10M50

SCNS UNIT

There is no supply part in this unit.

SCNP UNIT

There is no supply part in this unit.

INDB UNIT
SEMICONDUCTORS

D111

LT9010T

RESISTORS

ALL RESISTORS

RD1/6PM□□□J

Mark No. Description Part No.

FTSB UNIT (LC-V200/KUC type)

SEMICONDUCTORS

IC204, IC802
IC801
IC201
IC804
IC803

BA15218N
CXA1081S
CXD2500AQ
LA6510L
PM3003A

Q203, Q802, Q812, Q819
Q901
Q816, Q818
Q902
Q201, Q803-Q805, Q807, Q810, Q814,
Q825, Q831

2SA1037K
2SA933S
2SB1185-F8
2SC1740S
2SC2412K

Q815, Q817
Q822
Q821
D834
D801, D804-D807, D830-D832

2SD1762-F8
2SD1858X
2SK184
04AZ10-Y
1SS254

D201
D802, D803
D833

PCS4M
MTZJ3. 6A
MTZJ6. 2C

COILS/TRANSFORMERS

L804
L801, L803
L802
L227
L225

LAU100J
LAU151J
LAU181J
LAU2R2M
LFA4R7K

CAPACITORS

C817, C899
C810, C811, C822
C232
C871
C812, C815

CCSQCH050C50
CCSQCH101J50
CCSQCH120J50
CCSQCH221J50
CCSQCH270J50

C884, C929
C846
C804, C809
C837, C844, C852
C818

CCSQCH330J50
CCSQCH470J50
CCSQCH880J50
CCSQSL331J50
CCSQSL471J50

C819
C225, C807, C838, C845
C842, C863
C870
C850

CCSQSL561J50
CEANP010M50
CEANP100M16
CEANP220M10
CEANP2R2M50

C339
C205, C866
C840
C855, C862, C864
C203

CEANP3R3M50
CEANP47M50
CEAS010M50
CEAS100M50
CEAS101M10

C835, C836
C823, C841, C876, C877, C930, C931
C208, C230, C857, C859
C808, C814, C816
C932

CEAS101M25
CEAS220M25
CEAS470M10
CEJA010M50
CEJA220M16

C211
C824, C849, C861, C865, C873

CEJA470M10
CFTNA103J50

C874

CFTNA104J50

Mark No. Description Part No.

C883
C843
C827, C867
C848, C869

CFTNA124J50
CFTNA223J50
CFTNA333J50
CFTNA473J50

C847, C868
C825
C231, C875
C202
C854

CFTNA683J50
CFTXA682J50
CKSQYB102K50
CKSQYB152K50
CKSQYB821K50

C206, C235, C237, C345, C803, C805,
C856, C858, C860, C933, C934, C936
C204, C209, C212, C228, C229, C851,
C881, C882, C937, C938
C201, C210, C820, C821, C878-C880,
C888
C839
C853

CKSQYF103250
CKSQYF104250
CKSQYF473250
CQMA102J50
CQMA332J50

C935 (1F/5. 5)

VCH1039

RESISTORS

R984, R985
R851, R863
R813, R825, R832, R833, R856, R873,
R910-R913, R918, R923, R934, R942,
R946, R951, R983, R996
VR602, VR603
VR601

DCN1002
RD1/2LF□□□
RD1/6PM□□□

VRTB6VS103
VRTB6VS222

VR608
VR604-VR606, VR609
VR607
OTHER RESISTORS

VRTB6VS333
VRTB6VS472
VRTB6VS473
RS1/10S□□□

OTHERS

CN123 TOP POST 5P
CN111 TOP CONNECTOR 22P
X201 CRYSTAL RESONATOR (16MHz)

B5P-SHF
VRN1137
VSS1051

FTSB UNIT (LC-V100/SEM TYPE)

SEMICONDUCTORS

IC702, IC703, IC802
IC801
IC701
IC805, IC806
IC804
IC803

BA15218N
CXA1081S
CXD2500AQ
ICP-N15
LA6510L

IC751
IC803
Q704, Q802, Q812, Q819
Q901
Q816, Q818

PD0162A1
PM3003A
2SA1037K
2SA933S
2SB1185-F8

Q902
Q701, Q801, Q803-Q805, Q807, Q810,
Q813, Q814, Q825, Q831
Q815, Q817
Q822
Q821

2SC1740S
2SC2412K
2SD1762-F8
2SD1858X
2SK184

D834
D703, D801, D804-D809, D830-D832
D701
D702
D802, D803

04AZ10-Y
1SS254
PCS4M
MTZ6. 2B
MTZJ3. 6A

Mark	No.	Description	Part No.
------	-----	-------------	----------

D833

MTZJ6.2B

COILS/TRANSFORMERS

L801, L803

LAU151J

L802

LAU181J

L751

LAU470J

L804

LAU47K

L702

LFA120K

L701

LFA47K

CAPACITORS

C817, C899

CCSQCH070D50

C810, C811, C822

CCSQCH101J50

C716

CCSQCH120J50

C871

CCSQCH221J50

C812, C815, C937

CCSQCH270J50

C754, C755

CCSQCH300J50

C884, C829

CCSQCH330J50

C804, C846

CCSQCH470J50

C809, C813

CCSQCH680J50

C702, C717, C875

CCSQSL102J50

C837, C844, C852

CCSQSL331J50

C727, C818

CCSQSL471J50

C819

CCSQSL561J50

C720, C807, C838, C845

CEANP010M50

C842, C863

CEANP100M16

C870

CEANP220M10

C726

CEANP2R2M50

C721

CEANP3R3M50

C850

CEANP4R7M50

C708, C866

CEANP47M50

C840

CEAS010M50

C855, C862

CEAS100M50

C751

CEAS101M10

C835, C836

CEAS101M25

C823, C841, C876, C877, C930, C931

CEAS220M25

C857

CEAS470M10

C712, C718, C859

CEAS470M16

C808

CEJA010M50

C864

CEJA10M50

C703

CEJA101M10

C932

CEJA220M16

C714

CEJA470M10

C814, C816

CEJANP010M50

C722, C824, C861, C865, C873

CFTNA103J50

C874

CFTNA104J50

C883

CFTNA124J50

C843

CFTNA223J50

C826

CFTNA224J50

C827, C849, C867

CFTNA333J50

C848, C869

CFTNA473J50

C847, C868

CFTNA683J50

C839

CFTXA102J50

C825

CFTXA682J50

C854

CKSQYB821K50

C705, C707, C719, C723, C753, C756,

CKSQYF103Z50

C803, C805, C856, C858, C860, C933,

C934, C936

Mark	No.	Description	Part No.
------	-----	-------------	----------

C704, C709-C711, C713, C724, C725,

CKSQYF104Z25

C851, C881, C882, C938

CKSQYF473Z25

C701, C706, C752, C820, C821,

C878-C880, C888

C853

CQMA332J50

C935 (1F/5.5)

VCH1039

RESISTORS


R984, R985

DCN1002



R851, R863

RD1/2LF□□□J

R813, R825, R832, R833, R856, R873,

RD1/6PM□□□J

R910-R913, R918, R923, R934, R942,

R946, R951, R983, R996

VR602, VR603

VRTB6VS103

VR601

VRTB6VS222

VR608

VRTB6VS333

VR604-VR606, VR609

VRTB6VS472

VR607

VRTB6VS473

OTHER RESISTORS

RS1/10S□□□J

OTHERS

CN121

BSP-SHF

CN111

VKN1137

X751 CERAMIC RESONATOR (F=9.00MHz)

VSS1040

X701 CRYSTAL RESONATOR

VSS1051

VDEM UNIT (LC-V200/KUC type)
SEMICONDUCTORS

IC605

BA10393N

IC602, IC603, IC606

BA15218N

IC403

CX1-1009P

IC404

PA0017-P

IC401

PA5013A

IC101

PD0162A1

IC402

FM0001

IC601

FM0002

Q457, Q496, Q511

ZSA1037K

Q431, Q512

ZSC1740S

Q405, Q432, Q456, Q497, Q498-Q500,

ZSC2412K

Q607, Q611

Q616

ZSK184

Q601

ZFW2-TR

D471, D601-D604, D609, D610,

ZSS254

D620-D622

D611

MTZJ6.2C

COILS/TRANSFORMERS

L457, L601

LAU101J

L414, L415, L521

LAU120J

L523

LAU150J

L496

LAU180J

L497

LAU181J

L412, L413

LAU220J

L483

LAU270J

L459-L462

LAU2R2M

L101, L431, L525, L603

LAU470J

L432, L522

LAU560J

L411, L511

LAU820J

L456, L458, L524

LFA221J

L416

LFA330J

Mark	No.	Description	Part No.
CAPACITORS			
	C417		CSSQCH050C50
	C415, C441, C450, C452, C497, C500,		CSSQCH100D50
	C537		
	C461		CSSQCH101J50
	C438		CSSQCH120J50
	C413, C509, C528, C529		CSSQCH151J50
	C485, C624, C625, C629, C655, C659,		CSSQCH180J50
	C661		
	C423, C424		CSSQCH200J50
	C516		CSSQCH220J50
	C414, C456		CSSQCH221J50
	C487, C451, C510		CSSQCH270J50
	C463		CSSQCH271J50
	C104, C105		CSSQCH300J50
	C416, C439, C447, C462		CSSQCH330J50
	C433, C496, C524		CSSQCH390J50
	C411, C412, C421, C422, C536		CSSQCH470J50
	C498, C654		CSSQCH820J50
	C803		CSSQSL471J50
	C471		CEANP010M50
	C436		CEAS010M50
	C101, C401, C402, C434, C457, C481,		CEAS101W10
	C482		
	C484, C489, C490, C641, C642		CEAS470W10
	C428		CEAS471M6R3
	C475, C476		CEAS4R7M50
	C518		CEJA010M50
	C522		CEJA100M35
	C445, C525, C601		CEJA101M6R3
	C612		CEJA220M25
	C405, C406, C464, C465, C499, C501,		CEJA470M10
	C502, C512, C521, C533, C622		
	C443, C472, C621		CEJA4R7M50
	C518		CEJANP220M10
	C616, C663		CEJANP2R2M50
	C446, C614		CFTNA103J50
	C514, C615		CFTNA104J50
	C530		CFTNA184J50
	C474, C604		CFTNA224J50
	C610		CFTNA563J50
	C515, C517		CFTNA683J50
	C605-C607		CFTXA102J50
	C608		CFTXA152J50
	C403, C467, C538		CCTXA473K25
	C523		CXSQYB102K50
	C103, C106, C418, C425, C426,		CXSQYF103Z50
	C458-C460, C486, C535, C628, C630,		
	C643-C646, C651-C653, C670-C672		CXSQYF104Z25
	C404, C427, C429, C435, C442, C479,		
	C480, C503, C505, C506, C508, C511,		
	C513, C526, C531		CXSQYF473Z25
	C102, C407, C408, C431, C432, C448,		
	C449, C466, C473, C477, C478, C483,		
	C487, C488, C504, C507, C527, C534,		
	C602, C623, C682		
	C620		CQMA222J50
	C444, C611		CQMA272J50
	C613, C619		CQMA332J50

Mark	No.	Description	Part No.
	VC901		VCN-008
RESISTORS			
	R431, R442, R544, R546, R547, R647		RD1/6PM□□□
	R438, R511, R415, R416, R434		RN1/6P□□□□□□
	R109, R548		RS1/10S000□
	R626, R728, R729		RS1/10S□□□□
	VR441, VR481		VRT6V5103
	VR482, VR521		VRT6V5472
	OTHER RESISTORS		RS1/10S□□□□
OTHERS			
	X801 CRYSTAL RESONATOR		VSS1026
	(F=14.31MHz)		
	X101 CERAMIC RESONATOR		VSS1040
	(F=9.00MHz)		
VDEM UNIT (For LC-V100/SEM type)			
SEMICONDUCTORS			
	IC511		BA10393
	IC310, IC311		BU4053BF
	IC505		TC74HC4053AF
	IC103		ICL1009P
	IC303, IC304, IC308		HD74HC74FP
	IC506		NJM082D
	IC309		NJM1496D
	IC512		NJM4558D
	IC509		NJM4558S
	IC104		PA0017-P
	IC101		PA5013A
	IC102		PM0001
	IC501		PM3002
	IC302		SN74LS00NS
	IC504		TC74HC00AF
	IC305, IC306		TC74HC10AF
	IC507		TC74HC123AF
	IC307		TC74HC86AF
	IC503		TC74HC240AF
	IC301		TC74HC240AF
	Q104, Q105, Q108, Q111, Q113, Q114,		2SA1037K
	Q115, Q121, Q304, Q317		
	Q101-Q103, Q106, Q107, Q109, Q110,		ZSC2412K
	Q112, Q115-Q118, Q120, Q123, Q303,		
	Q305-Q316, Q318-Q320, Q504, Q511		
	Q510		2SK184
	Q502		PM72-TR
	D101, D471, D501-D506, D509-D512		1SS254
COILS/TRANSFORMERS			
	F306		DTH1122
	L104, L105, L112-L115, L121, L307,		LAU120J
	L308, L503		
	L110, L303, L304		LAU121J
	L109, L111, L118, L125		LAU181J
	L102, L103, L117, L501		LAU220J
	L128		LAU2R2J
	L120, L124, L305, L306		LAU330J
	L106, L108		LAU390J
	L122, L502		LAU470J
	L107, L123		LAU560J
	L101, L127		LAU680J

Mark	No.	Description	Part No.
	L116, L119		LAU820J
	L309, L3		LAU8R2J
	F305		VTF1011
	F303		VTF1018
	F302		VTF1030
	F301		VTF1032
	F304		VTF1034
	DL302		DTF1005
	DL301		VTF1037

CAPACITORS

C117	CCSQCH050C50
C115, C118, C136, C139, C194, C225	CCSQCH100D50
C112, C153, C314, C511, C512, C518	CCSQCH101J50
C218, C226	CCSQCH120J50
C502, C503, C515	CCSQCH121J50

C113, C144, C145, C203	CCSQCH151J50
C125, C163, C528, C532	CCSQCH180J50
C120, C121	CCSQCH200J50
C185, C202, C222	CCSQCH220J50
C114, C507, C193	CCSQCH221J50

C134, C195	CCSQCH270J50
C148, C155, C313	CCSQCH271J50
C116, C305, C315	CCSQCH380J50
C128, C138, C154, C188, C209, C216, C306, C307, C324	CCSQCH390J50
C137, C217, C316	CCSQCH470J50

C204, C215	CCSQCH560J50
C190	CCSQCH680J50
C109, C110, C525	CCSQCH820J50
C208, C508, C522	CCSQSL102J50

C356, C357	CCSQSL681J50
C160	CEANP100M50
C219	CEANP100M16
C363, C365, C372	CEANP220M10
C345	CEANP470M10

C131	CEAS101M10
C105, C165, C320, C342, C359, C361, C369, C370, C510	CEAS470M10
C164, C323, C343, C347, C366, C367, C533, C534	CEAS470M16
C133, C212	CEJA010M50
C207	CEJA100M35

C101, C102, C126, C142, C149, C171, C172, C199, C210, C517, C1025	CEJA101M10
C186, C530	CEJA220M16
C106, C158, C159, C181, C191, C200, C206, C221, C326, C328, C329, C364, C506, C552, C1015-C1018	CEJA470M10
C169	CEJA470M16
C140, C161, C177, C178, C551	CEJA47M50

C541	CEJANP220M10
C540	CEJANP22R2M50
C362, C371	CEJANP470M10
C143, C539	CFTNA103J50
C183, C538	CFTNA104J50

C179, C519	CFTNA224J50
C527	CFTNA563J50
C184, C205	CFTNA683J50

Mark	No.	Description	Part No.
	C521, C523		CFTXA102J50
	C524		CFTXA152J50
	C111, C119, C123, C124, C150, C151, C152, C168, C224, C312, C317-C319, C321, C322, C395, C327, C340, C341, C344, C346, C348-C355, C358, C360, C368, C373, C378-C382, C501, C504, C505, C509, C514, C520, C535-C537, C543, C554, C555		CKSQYF103Z50
	C103, C104, C122, C127, C132, C135, C173, C174, C180, C196, C211, C220, C1011, C1012		CKSQYF104Z25
	C107, C129, C130, C146, C147, C156, C157, C162, C166, C167, C170, C175, C213, C214, C516, C553		CKSQYF473Z25
	C550		CQMA222J50
	C141, C529		CQMA272J50
	C132		CKCYF473Z50
	C133, C134		CKPUYB102K50
	C531, C542		CQMA332J50
	VC301-VC303 (20p)		DCM1005

RESISTORS

R116, R317, R320, R586	RD1/6PM□□□J
R113, R114, R121, R132, R144	RN1/6PQ□□□□F
R545, R572, R573	HS1/10S□□□F
VR101, VR102	VRTB6VS103
VR301-VR303	VRTB6VS471

VR103, VR104, VR304	VRTB6VS472
OTHER RESISTORS	RS1/10S□□□J

OTHERS

X301 CRYSTAL RESONATOR (17.734MHz)	VSS1019
X302 CRYSTAL RESONATOR (14.318MHz)	VSS1029
X303 CRYSTAL RESONATOR (14.22MHz)	VSS1053

SPFG UNIT
SEMICONDUCTORS

D1	GP1S51
----	--------

MSWB UNIT
SWITCHES

S1-S3	DSG1015
-------	---------

SYSB UNIT
SEMICONDUCTORS

IC109	HD6415108F10
IC105	LM2940CT-5.0
IC103	MEM30011B
IC113	NJU4051BD
IC110-IC112	PD6012A
IC107	PD6104D
IC101	PST523E
IC106	TC5564APL-15
IC102	TCT4HC00AP
IC108	TCT4HC20AP
IC104	TCT4HC4052AP
Q101, Q102	XDA124ES
D106	1SS254
D104, D105	GL7P290
D101-D103	MT26, 2C

Mark	No.	Description	Part No.
------	-----	-------------	----------

SWITCHES

S101-S106	RSG1010
-----------	---------

COILS/TRANSFORMERS

L101	LFA220K
------	---------

CAPACITORS

C115, C116	CCCCH100D50
C106, C109, C111, C114, C120, C121	CEAS101M10
C124	CEAS2R2M50
C105, C107, C108, C118	CEAS331M16
C117, C119	CGCYX104M25

C126	CKCYB101K50
C101-C103, C133, C134	CKCYB102K50
C104, C110, C112, C113, C122, C123, C125, C127-C131	CKCYF103Z50
C132	CKCYF473Z50

RESISTORS

R208	RA7S473J
OTHER RESISTORS	RD1/6PM□□□□

OTHERS

JA101 JACK	RKN1024
IC SOCKET	OKH1006
X101 CRYSTAL RESONATOR (F=19.7MHz)	RSS1040

DISP UNIT**SEMICONDUCTORS**

IC301, IC302	PD0012A
D305	1SS254
D304	6L7P290
D301	SLH-34VC3H3-S/T
D303	SLH-34VC3H3-S/T

SWITCHES

S301-S312	RSG1010
-----------	---------

CAPACITORS

C301, C303, C305	CEAL101H6R3
C306	CEAL2R2M50
C302, C304	CKFUYF103Z25

RESISTORS

ALL RESISTORS	RD1/6PM□□□□
---------------	-------------

PSPB UNIT**SEMICONDUCTORS**

D101	1SS254
------	--------

RELAYS

RY101	DSR1009
-------	---------

COILS/TRANSFORMERS

L101, L102	VTL-004
------------	---------

CAPACITORS

C105-C113 C=0.01, V(AC)=400/1	VCG-048
-------------------------------	---------

PSSB UNIT**SEMICONDUCTORS**

IC101, IC102	HJW7805FA
IC103	HJW7805FA
Q103	2SA1283

Mark	No.	Description	Part No.
------	-----	-------------	----------

Q101	2SA1286
Q104	2SC3243

Q105	XDA144ES
Q102, Q106	XDC144ES
D108, D109	1SS254
D106, D107, D110	D3SBA20
D102, D105	S2VB20

CAPACITORS

C116, C121, C122	CEAS100M50
C120	CEAS222M16
C117, C123, C124	CEAS470M16
C115	CEAS472M16
C119	CEAS682M16

C114, C118, C125, C126, C130, C131, C134, C135, C138-C143	CKCYF103Z50
C132, C133, C136, C137	DCH1042
(C=8200, V=25)	
C127-C129 (C=10000)	VCH1050

RESISTORS

R104	RD1/2LF□□□□
OTHER RESISTORS	RD1/6PM□□□□

SBTB UNIT

There is no supply part in this unit.

MTPB UNIT**OTHERS**

CN42	B2P3S-YH
------	----------

MTSB UNIT

There is no supply part in this unit.

FUSB UNIT

There is no supply part in this unit.

CNNB ASSEMBLY**SWITCHES**

S201	VSK1017
------	---------

RESISTORS

ALL RESISTORS	RD1/6PM□□□□
---------------	-------------

OTHERS

CN203	VKN1138
CN204	VKN1139

HEAD ASSEMBLY**CAPACITORS**

C4	CKSQYF104Z25
C6	CKSQYF104Z25
C3	CKSQYF223Z50
C5	CKSYF105Z16

SLMB ASSEMBLY

There is no supply part in this assembly.

7. ADJUSTMENTS

7.1 ADJUSTMENT OF LD PLAYER SECTION

7.1.1 Preparations • Precautions

1. Test Mode

- 1) How to start up the test mode

Ground the test mode pin [pin 13 of the system control IC (KUC: IC101/VDEM unit, SEM: IC751/FTSB unit)] when the mechanism is not operating while the power is on.

- 2) Test mode functions used in this adjustment

— Function —

TRKG servo open/close

Tilt servo off (-/+)

Focus balance

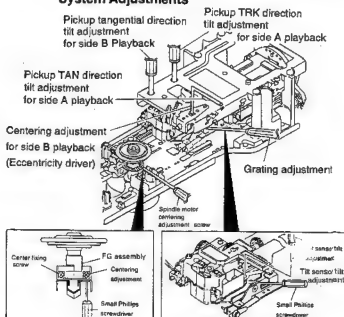
Keys used

▶ (toggle)

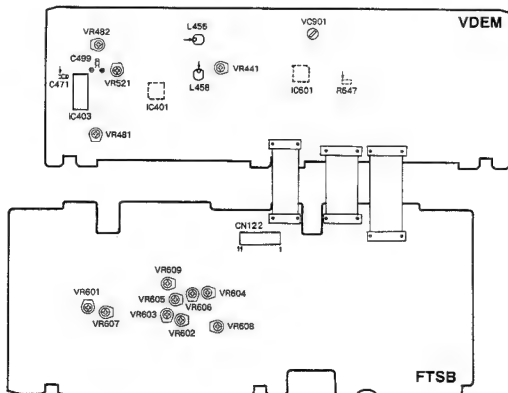
◀▶ (toggle)

b key (*)




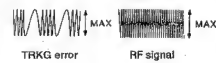
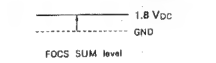
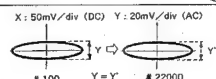
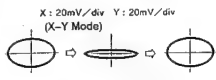
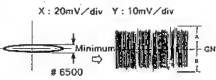
3. Positions for Inserting Driver in Mechanical System Adjustments











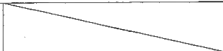
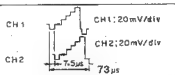

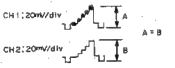

2. Unit Adjustment Diagram (LC-V200/KUC)



7.1.2 Adjusting Specifications Table


No.	Adjusting Method	Adjusting Point	Type of Measuring Equipment and Connecting Section	Condition of Player	Adjusting Method	Waveform
FTSB (FTS section) UNIT						
1	Tilt servo gain adjustment	• VR808	(Measuring equipment is not used.)	• Power supply switch OFF	• Adjust VR808 as follows, according to the mark at the side of the tilt sensor. Red ...Rotate VR808 in the clockwise direction fully. None...Adjust VR808 to the mechanical center. Blue ...Rotate VR808 in the counterclockwise direction fully.	
2	Tilt off set adjustment	• VR807 (TILT OFST)	• TV monitor Test mode display	Test mode Stop	• Adjust VR807 so that tilt the error display becomes "T"	
3	• Grating coarse adjustment • TRKG balance adjustment	• Grating • VR802 (TRKG BAL.)	• Oscilloscope • FTSB unit CN122-9 (TR ERR)	• Test mode • TRKG servo open	• Adjust to TRKG servo open in the vicinity of #6500. • TRKG error waveform: Null point → Counterclockwise direction, maximum error level • Adjust VR802 so that the positive and negative amplitudes of the TRKG error waveform become equal.	
4	• Slider shaft horizontal adjustment	(In the test mode condition) Press the ►/◄ key.	• Oscilloscope • FTSB unit CN122-4 (FO RTN) • Low pass filter (47 kΩ, 1 pF)	• Test mode • TRKG servo open • Tilt servo OFF	• Adjust to still condition at #9800 and #25000, measure the FOCUS RTN voltage at each section, and adjust the voltage difference to within 0 ± 20 mV.	
5	• Pickup (TAN/TRK) tilt adjustment	• TAN/TRK tilt adjustment screw	• Oscilloscope • FTSB unit CN122-3 (RF)	• Test mode • #115 still • Tilt servo OFF	• Adjust the pickup TAN/TRK direction tilt adjustment screw so that the RF waveform level becomes maximum. Check that there is no crosstalk at #115.	
6	• FOCUS balance adjustment	• VR605 (TE MAX) • VR606 (CT MAX)	• Oscilloscope • FTSB unit CN122-3 (RF) • CN122-9 (TR ERR)	• Test mode • TRKG servo close/open • Tilt servo OFF	• Adjust VR605 so that the TRKG error waveform becomes maximum. (TRKG servo open) • Adjust the RF waveform level to maximum using VR606. (TRKG servo close)	
7	• FOCUS SUM level adjustment	• VR608 (FOCUS SUM LEVEL)	• Oscilloscope • FTSB unit • CN122-11 (FO SUM)	• Test mode • TRKG servo close • Tilt servo OFF	• Adjust VR609 so that the FOCUS SUM level becomes 1.8VDC.	
8	• Tilt sensor tilt adjustment • Tilt balance adjustment	• Tilt sensor tilt adjustment screw • VR807 (TILT OFST)	TV Monitor Test mode display	• Test mode #19,000/#115 still • TRKG servo loop close • Tilt servo OFF	• Still at #19,000 • Adjust VR807 to the center. • Adjust the tilt adjustment screw so that the tilt error display becomes 9 to 8. Still at #115 • Adjust VR807 so that the tilt error display becomes 7.	
9	• Spindle motor centering check	• Check the resurge waveform with an oscilloscope	• Oscilloscope CH1: CN122-9 (TR ERR) CH2: CN122-1, 2 Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • TRKG servo open • Tilt servo ON	• Adjust to TRKG servo open in the vicinities of #100 and #22000, and check that the shapes of the resurge waveforms become equal.	
10	• Spindle motor centering adjustment	• Spindle motor centering adjustment screw	• Oscilloscope CH1: CN122-9 (TR ERR) CH2: CN122-1, 2 Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • TRKG servo open • Tilt servo ON	• Adjust the spindle motor centering adjustment screw to TRKG servo open in the vicinities of #100 and #22000, and adjust so that the shapes of the resurge waveforms become equal.	
11	• Grating line adjustment • TRKG balance adjustment	• Grating • VR802	• Oscilloscope CH1: CN122-9 (TR ERR) CH2: CN122-1, 2 (TRK A+C) Each creates TRK A+C via a 10 kΩ resistor.	• Test mode • TRKG servo open • Tilt servo ON	• Adjust to TRKG servo open in the vicinity of #6,500. • Minimize the amplitude of the resurge waveform in the Y direction. • Adjust so that the negative and positive levels of the TRKG error waveform become equal.	

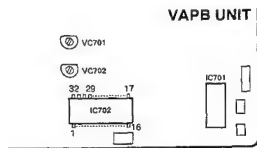
Note: The connector number for CLD-LCV200 (LC-V200) has been specified as CN122 in "Type of Measuring Equipment and Connecting Section". Take note that the connector number for CLD-LCV100 (LC-V100) is CN121.

No.	Adjusting Method	Adjusting Point	Type of Measuring Equipment and Connecting Section	Condition of Player	Adjusting Method	Waveform
12	RF gain adjustment	VR601 (RF LEVEL)	<ul style="list-style-type: none"> Oscilloscope CH1: CN122-3 (RF) 	<ul style="list-style-type: none"> Test mode #15000 still TRKG servo close Tilt servo ON 	<ul style="list-style-type: none"> Adjust VR601 so that the amplitude of the RF signal becomes $300 \text{ mV} \pm 50 \text{ mV}$. 	 <p>300mV \pm 50mV A = B #15000 RF 10mV/div, 5mS/div</p>
13	FOCS servo loop gain adjustment	VR604 (FOCS GAIN)	<ul style="list-style-type: none"> Oscilloscope CH1: CN122-6 (FO ERR) CH2: CN122-7 (FO IN) CH1 is connected via a 47 kΩ resistor. 	<ul style="list-style-type: none"> Test mode #15000 still TRKG servo close OSC. 1.7 kHz/6 Vp-p Tilt servo ON 	<ul style="list-style-type: none"> Adjust VR604 so that the resurge waveforms in the X and Y directions become symmetrical (horizontal). 	 <p>X: 0.2V/div Y: 10mV/div DC (X-Y mode) #15000</p>
14	TRKG servo loop gain adjustment	VR603 (TRKG GAIN)	<ul style="list-style-type: none"> Oscilloscope CH1: CN122-9 (TR ERR) CH2: CN122-10 (TR IN) CH1 is connected via a 47 kΩ resistor. 	<ul style="list-style-type: none"> Test mode #15000 still TRKG servo close OSC. 3.0 kHz/6 Vp-p Tilt servo ON 	<ul style="list-style-type: none"> Adjust VR603 so that the resurge waveforms in the X and Y directions become symmetrical (horizontal). 	 <p>X: 0.2V/div Y: 10mV/div DC (X-Y mode) #15000</p>
15	Side B playback start position check Side B playback centering adjustment	Side B centering adjustment screw	<ul style="list-style-type: none"> Oscilloscope CH1: CN122-9 (TR ERR) CH2: CN122-1,2 (TRK A+C) Each creates TRK A+C via a 10 kΩ resistor. 	<ul style="list-style-type: none"> Test mode Side B TRKG servo open 	<ul style="list-style-type: none"> Adjust to TRKG servo open in the vicinity of #100, and adjust the side B centering adjustment screw so that the amplitude of the resurge waveform in the Y direction is minimum. 	 <p>X: 20mV/div Y: 10mV/div (DC) (X-Y mode) #100 X (MAX)</p>
16	Side B playback pickup tangential direction tilt adjustment	Pickup tangential direction tilt adjustment screw	TV monitor	<ul style="list-style-type: none"> Side B #115 still 	<ul style="list-style-type: none"> Adjust the pickup tangential direction tilt adjustment screw so that the crosstalk becomes minimum. 	 <p>TV CT Min. #115</p>
17	Side B playback centering fine adjustment	Side B centering adjustment screw	<ul style="list-style-type: none"> Oscilloscope CH1: CN122-9 (TR ERR) CH2: CN122-1,2 (TRK A+C) Each creates TRK A+C via a 10 kΩ resistor. 	<ul style="list-style-type: none"> Test mode Side B TRKG servo open 	<ul style="list-style-type: none"> Adjust to TRKG servo open in the vicinity of #100, and adjust the side B centering adjustment screw so that the amplitude of the resurge waveform in the X direction becomes maximum. 	 <p>X: 20mV/div Y: 10mV/div (DC) #100 X (MAX)</p>
VDEM (TBC section) UNIT (LC - 200/KUC only)						
18	Standard frequency adjustment	VC901 (REFERENCE FREQ.)	<ul style="list-style-type: none"> Frequency counter End of R647 	<ul style="list-style-type: none"> Stop mode 	<ul style="list-style-type: none"> Adjust VC901 so that the frequency becomes 3.579545 MHz. 	
VDEM (VIDEO section) UNIT (LC - 200/KUC only)						
19	VCO center frequency adjustment	VR481 (VCO FREQ.)	<ul style="list-style-type: none"> Oscilloscope CH1: C471 lead wire CH2: C409 + Side lead wire (Delay line) 	<ul style="list-style-type: none"> #5100 still 	<ul style="list-style-type: none"> Adjust VR481 so that the video signal of CH1 is delayed 73 μs in respect to the video signal of CH2. 	 <p>CH1: 20mV/div CH2: 20mV/div 73µs</p>
20	Output video level adjustment	VR482 (VIDEO LEVEL)	<ul style="list-style-type: none"> Oscilloscope Video output terminal 	<ul style="list-style-type: none"> #19900 still 	<ul style="list-style-type: none"> Adjust VR482 so that the level from the sync chip of the video signal to the white peak becomes $1\text{V} \pm 5\%$. 	 <p>20mV/div 1.0V \pm 5%</p>
21	1H delay video level adjustment	VR441 (1H LEVEL)	<ul style="list-style-type: none"> Oscilloscope CH2: L458 lead wire (1H delay line) CH1: L458 lead wire 	<ul style="list-style-type: none"> #3800 still 	<ul style="list-style-type: none"> Adjust VR441 so that the 1H delay video signal level of CH2 becomes equal to the main video signal level of CH1. 	 <p>CH1: 20mV/div CH2: 20mV/div A = B</p>
22	Hue error signal level adjustment	VR521 (VPS LEVEL)	TV monitor	<ul style="list-style-type: none"> #8000 still 	<ul style="list-style-type: none"> Adjust VR521 so that the color irregularity of the magenta display becomes minimum. 	 <p>TV #8000 Minimum color irregularity</p>

7.1.3 VAPB UNIT ADJUSTMENT

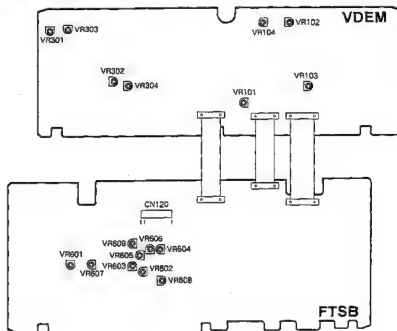
No.	Adjustment	Adjusting Point	Adjusting Specifications	Inspection Standard	Remarks
VAPB UNIT					
1	Character generator clock adjustment	VC701	Adjust VC701 for 14.31818MHz at pin 29 IC702.	14.31818MHz \pm 500Hz	(*)
		VC702	Adjust VC702 for 17.73447MHz at pin 29 IC702.	17.73447MHz \pm 500Hz	SEM type only

(*)1: When performing this adjustment on the SEM model, switch the  (S302) SW on the DISP UNIT from PAL to NTSC.
(It will be set to PAL (17M) when the TEST MODE is started up. For details, refer to "Table 4" on page 209.)





Adjusting point

● Unit Adjustment Diagram (LC-V100/SEM)



7.2 ELECTRICAL ADJUSTMENTS (LC-V100/SEM only)

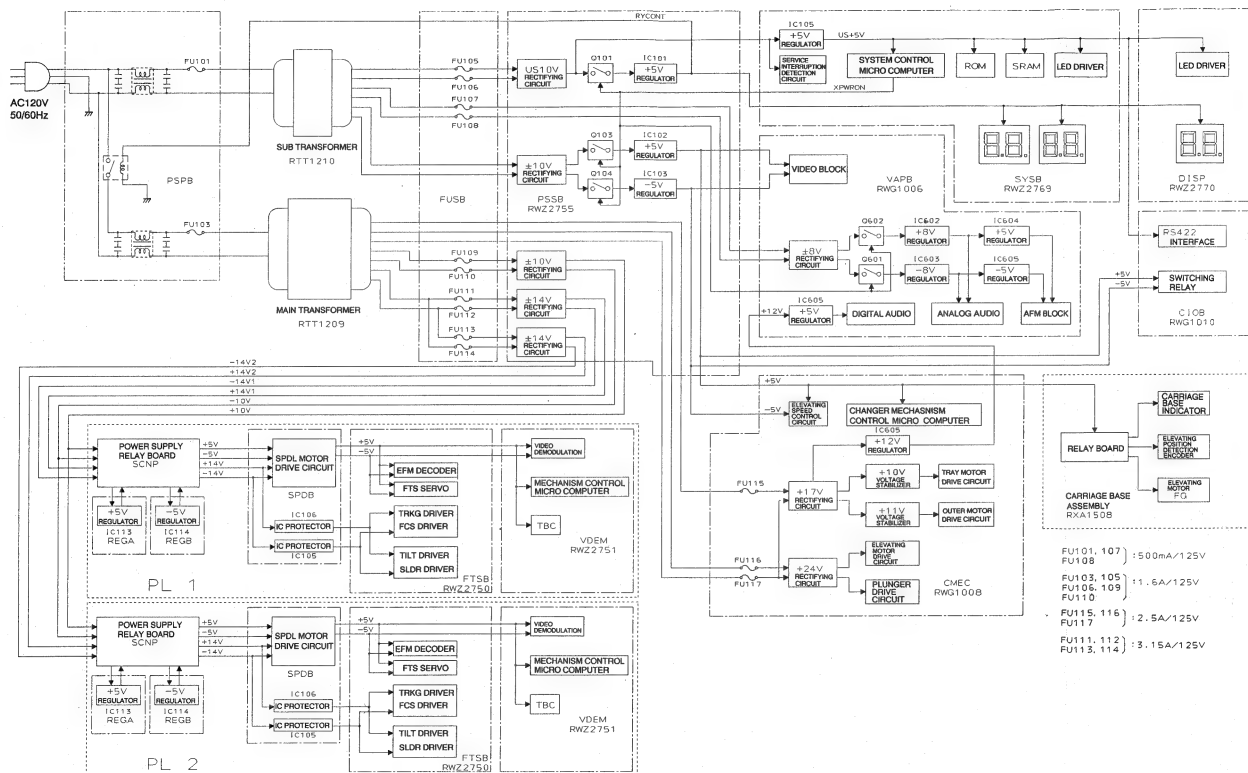
Note: This unit automatically switches between the NTSC and PAL systems by reading the Phillips code on the test disc. Use the GGV-145 PAL disc for the items marked for PAL mode in the Remarks column and the GGV1003 NTSC disc for the items marked for NTSC mode.

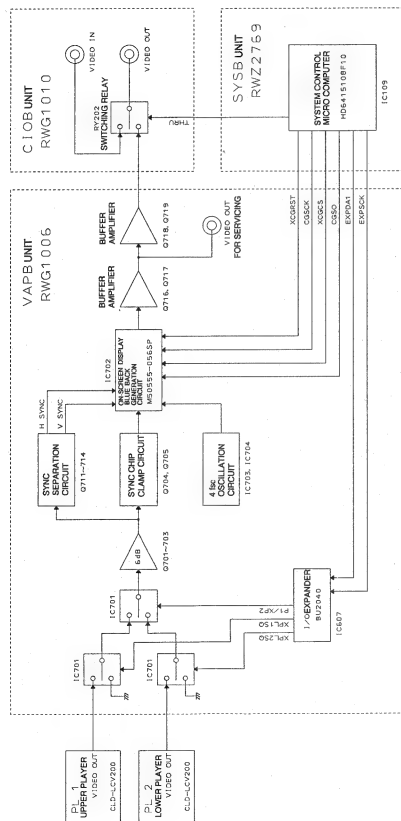
No.	Adjustment	Adjusting Point	Adjusting Specifications	Inspection Standard	Remarks
VDEM (PALB section) UNIT					
1	Sync-generator Clock Adjustment	VC301	Adjust VC301 for 17.734475MHz at pin 3 IC307.	17.734475MHz \pm 100Hz	PAL mode
2	NTSC REF Clock adjustment	VC302	Adjust VC302 for 14.31818MHz at pin 6 IC302.	14.31818MHz \pm 100Hz	NTSC mode
3	REF Clock Adjustment	VC303	Adjust VC303 for 3.5546875MHz at pin 8 IC501.	3.5546875MHz \pm 25Hz	PAL mode
VDEM (VIDEO section) UNIT					
4	VCO Center Frequency Adjustment	VR102	 <p>Adjust VR102 so that the time lag between CCD input video (Q109 emitter) and the CCD output video (Q114 emitter) becomes 70 μsec (1H + 6 μsec). For this adjustment, connect pin 8 of IC104 to GND.</p>	70 μ sec \pm 1.4 μ sec	PAL mode
5	Video Level Adjustment	VR103	 <p>Adjust the 100 % white video level to 2 Vp-p at VIDEO OUT (Q123 emitter).</p>	2Vp-p \pm 5%	PAL mode
6	1H Delay Video Level Adjustment	VR101	Adjust VR101 so that the level of the 1H-delay video at pin 33 of IC101 becomes the same as that of the main-line video pin 35.	Main-line video \pm 3%	PAL mode
7	VPS ERR Level Adjustment	VR104	While observing the magenta screen on a vector scope, minimize the jitter at VIDEO OUT (pin 1 CN102).		PAL mode
VDEM (PALB section) UNIT.					
8	MOD Video Level Adjustment	VR304	Adjust VR304 so that the luminance level of the MOD video at pin 13 of IC311 becomes the same as that of the through video at pin 12.	\pm 3%	PAL mode
9	1H Delay S.C. Level Adjustment	VR302	While observing color bars in still mode on a vector scope, minimize the gain variation at VIDEO OUT (Pin 1 CN102).		PAL mode
10	MOD Y Level adjustment	VR303	Adjust VR303 so that the luminance level at pin 13 of IC310 (passed through the comb filter) becomes equal to that at pin 12 of IC 310 (passed through the 3.2M L. P. F.).	\pm 3%	NTSC converter mode
11	MOD SC Level adjustment	VR301	Adjust VR301 so that the converter chroma level at IC310 pin 1 becomes the same as the main chroma level at IC310 pin 2.		NTSC converter mode

8. BLOCK DIAGRAMS

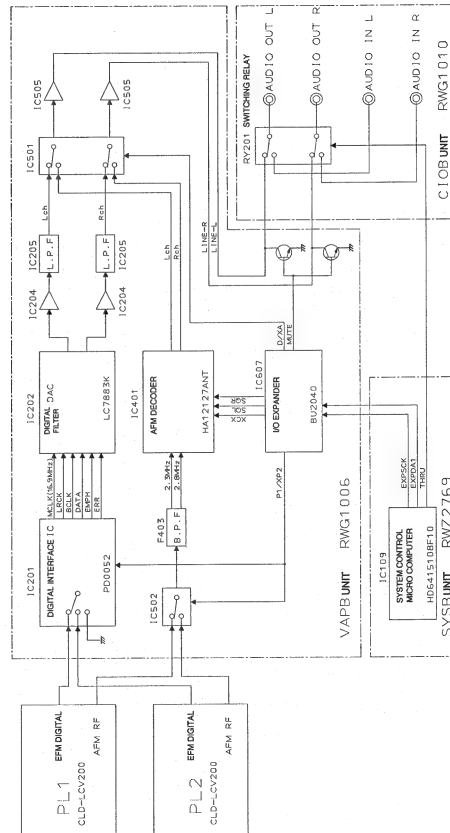
8.1 LC-V200/KUC type

● POWER SUPPLY BLOCK DIAGRAM

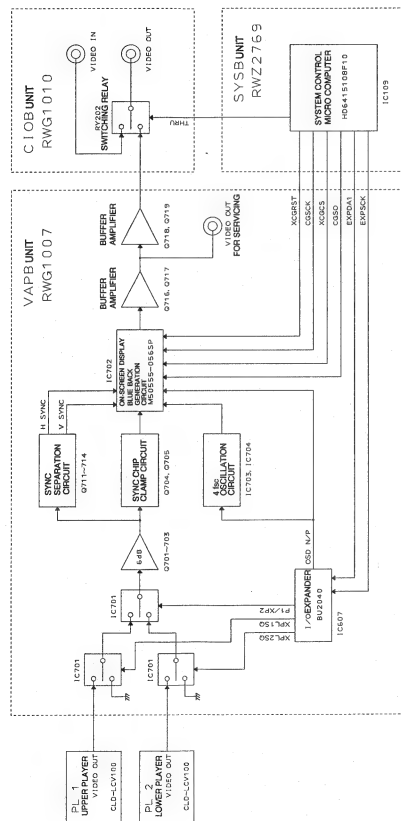




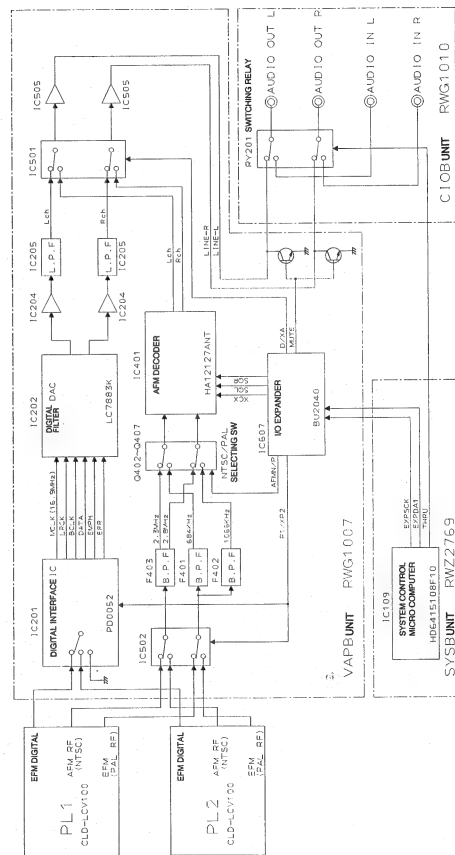
● AUDIO BLOCK DIAGRAM



● VIDEO BLOCK DIAGRAM



● AUDIO BLOCK DIAGRAM



9. TEST MODE

9.1. MODE TRANSITION DIAGRAM

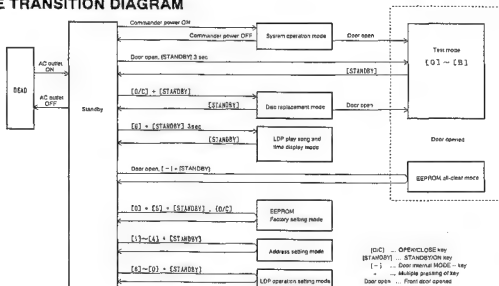


Fig. 1

9.2. MODE

(1) System operation mode

(2) Disc replacement mode

(3) Address setting mode

Refer to the instruction manual.

(4) LDP play song and time display mode

The song number played by the built-in player and time are displayed on the OSD. For details of displays, refer to the description for test mode 9.

[Displaying]

① In the standby state, while pressing the [6] key, continue pressing the [STANDBY/ON] key for approximately 3 seconds.

② Turn on the power of the commander. (Displayed on the monitor connected via the commander.)

○ Press the [STANDBY/ON] key to end. (Returns to the standby state.)

(5) EEPROM Factory Setting Mode

Clears error record, player information, song number played/time, address setting, LDP operation setting. (However, information on disc presence/absence and on mechanism position will not be cleared.)

[Setting]

① In the standby mode, while pressing the [0] and [5] keys together, press the [STANDBY/ON] key. [CC] will blink for approximately 3 seconds.

② Press the [OPEN/CLOSE] key while [CC] is blinking. ([CC] will light up for approximately 8 seconds.)

(6) EEPROM All-Clear Mode

Clears error record, player information, song number played/time, address setting, LDP operation setting, as well as information on mechanism position and of disc presence/absence.

Note: As data on the number of the tray in the player and outer will be cleared, be sure to initialize the mechanism first before clearing. If all-clear is executed before initializing the mechanism, the mechanism will not be initialized properly in the future.

[Setting]

① In the standby state, open the front door.

② While pressing the [-] key inside the door, press the [STANDBY/ON] key.
([CC] display After blinking for approximately 3 seconds, lights up for approximately 3 seconds.)

(7) LDP Operation Setting Mode

When the LDP cannot operate, it displays error messages and at the same time, automatically switches to the operations of one LDP and operates one player.

Set "only one LDP" when it is clear that the LDP has broken down and is to be removed from the main unit for repair. This prevents error messages from being displayed and error records from being repeated.

[Setting]

In the standby state, while pressing the following keys, press the [STANDBY/ON] key.

[8] Operates both LDP1 and LDP2.

[P.A.] will be displayed for approximately 3 seconds.

[9] Operates only LDP1.

[P.1] will be displayed for approximately 3 seconds.

[0] Operates only LDP2.

[P.2] will be displayed for approximately 3 seconds.

• The following are information required for diagnosing faults when errors have occurred.

Error code (Refer to Table 5 on page 209.)	The error code generated currently is displayed blinking inside the front operating panel.
Disc No.	Detailed data accompanying the error code.
Changer mechanism mode (Refer to Tables 7 and 8 on page 210.)	Displayed on the OSD and the LED inside the door in test mode 6. (Refer to page 213.)
Vertical address	

• Other than errors, there are also information such as reasons why the player cannot play by itself, etc.

PL information code (Refer to Table 6 on page 210.)	Displayed on the OSD and the LED inside the door in test mode 5. (Refer to page 213.)
Disc No.	

9.3 TEST MODE SPECIFICATIONS

9.3.1 SETTING AND RELEASING TEST MODES

[SETTING]

Open the front door during standby, and press the standby/on key for a few seconds to turn on the power supply. Or, open the front door while the power is on.

[RELEASING]

Press the standby/on key to set the unit into standby.

9.3.2 LIST OF FUNCTIONS

Mode	Function	Operations and Displays			
		+ / -	↑	↓	← →
1	PL1	[-]	Disc selection -	Disc selection +	Disc returns/stop
2	PL2				Disc setting/ playback
3	Changer (Manual)		Carrier rises	Carrier descends	Rack direction
4	Changer (Initial)		Carrier rises	Carrier descends	Carrier direction
5	PL information				Operation stops
6	Error record				Initial operation
7	Error clear				Disc no.
8	Display/Key	[+]	Address -	Address +	Operation mode
9	No. of songs played back. Time				Disc no.
A	Communication Monitor				Error record clear
B	Auto Test				PL information clear
			All those inside light up	All those outside light up	Those inside light up in order
					Those outside light up in order
			Menu selection -	Menu selection +	PL1 clear
					PL2 clear
					Operation stops
					Operations start

Table. 1

● FRONT PANEL OPERATIONS

(DURING NORMAL MODE/STANDBY)

Function	Operation	Display
Disc setting/replacement	[0/C] + [STANDBY/ON]	01 blinks
Address setting 1	[1] + [STANDBY/ON]	A.1
2	[2] + [STANDBY/ON]	A.2
3	[3] + [STANDBY/ON]	A.3
4	[4] + [STANDBY/ON]	A.4
Player operation AUTO/one side	[8] + [STANDBY/ON]	P.A
Only PL1	[9] + [STANDBY/ON]	P.1
Only PL2	[0] + [STANDBY/ON]	P.2
Test Mode	Door opens [STANDBY/ON] 3 sec.	

* [n] + [STANDBY/ON] : Press [STANDBY/ON] key while pressing [n] key.

n : Numerical key

Table. 2

(DURING NORMAL MODE/POWER ON)

Function	Operation	Inside the front operating panel display
When error occurs	[7] [8] [9]	Error code Error code (Multi error) Error code (Multi error) Error code (Multi error)
Test Mode	Door opens	

Table. 3

* The following operations can be carried out using the numerical keys when test mode 8 (display/key) is not set.

Operating Key	Function	Default
[1]	Rear output ON/OFF	OFF
[2]	OSD display mode NTSC/PAL	PAL
[3]	During NTSC disc playback Pseudo PAL	Pseudo PAL
[4]	During NTSC disc playback 4.43NTSC	
[5]	During NTSC disc playback 3.58NTSC	

For LC-V200, only the rear output can be switched.

Table. 4

[ERROR CODE LIST]

ERROR CODE LIST		
No.		Contents
--		No error
02		Mis-count of vertical address
04		Faulty vertical operations
07		Time over of vertical operations
08		Excessive vertical motor load
09		Time over of outer tray operations
12		Faulty EEPROM
27		Time over of horizontal operations
28		Time over of lock pin operation of carrier base
41		Communication error (System microprocessor ↔ Changer mechanism microprocessor)
42		Communication error (System microprocessor ↔ Player 1 microprocessor)
43		Communication error (System microprocessor ↔ Player 2 microprocessor)
44		Faulty changer mechanism microprocessor
45		Faulty disc sensor
46		Player 1 cannot play back (Only test mode B)
47		Player 2 cannot play back (Only test mode B)
PL1	PL2	
96	D6	Time over of clamp release
97	D7	Time over of clamp operations
A7	E7	Time over of Side A/Side B switching operations
A8	E8	Time over of Side A slider operations
A9	E9	Time over of Side B slider operations
B3	F3	Time over of clamp release of player when power turned on

Table. 5

[PL Information Table]

PL1		PL2		Contents
Side A	Side B	Side A	Side B	
80	88	C0	C8	TRANSIT SW has been detected.
81	89	C1	C9	Cannot focus, when determined as no discs
83	8B	C3	CB	Read-out occurred when search attempted
84	8C	C4	CC	No chapter when search attempted
85	8D	C5	CD	Spindle cannot lock when start up
86		C6		Different side from command played back (Disc reversed)
87	8F	C7	CF	Time over of disc start up operations
90	98	D0	D8	Mis-clamp
92	9A	D2	DA	Focus lost when start up
B0	B8	F0	F8	Time over of search operations
B5	BD	F5	FD	Cannot continue playback
B6	BE	F6	FE	Time over of TOC read operations

Table. 6

[OPERATION MODE]

(1) Operations of changer mechanism (When error codes are other than 12.)

Mechanism Mode (Upper digits)		Carrier Mode (Lower digits)	
0	Not used	0	Data standby
1	Mechanism initial	1	Carrier base upper initial
2	Sets disc in player	2	Carrier base lower initial
3	Returns disc from player	3	Horizontal direction initial
4	Replaces disc (Extracts)	4	Transfers to player 1
5	Replaces disc (Storage)	5	Transfers to player 2
6	Replaces disc (Stands by for outer tray)	6	Transfers to outer position
7	Carrier base standby	7	Transfers to rack (No.1 to 50)
8	Test mode	8	Pulls tray out onto carrier base
9	Not used	9	Sets tray on carrier base

* The operation mode is displayed in 2 digits. The upper digit displays the mechanism mode, the lower digit the carrier mode.

Table. 7

(2) When error code is 12 (EEPROM is faulty)

Indicates which data was being accessed when the error occurred.

1	Tray position writing (1)	9	Player 2 play song number writing
2	Tray position writing (2)	10	Play song number writing
3	Tray position writing (3)	11	Player 1 play time writing
4	Mechanism error writing	12	Player 2 play time writing
5	Player information writing	13	Player total play time writing
6	Disc presence/absence writing	14	Motor cooling timer writing
7	Address/player operations writing	80	Reading at initial stage
8	Player 1 play song number writing		

Table. 8

9.3.3 TEST MODE

(1) Operations

During the test mode, the switches on the board inside the front door are mainly used for operating.
Expandability has been attained using the keys and the remote control unit for service in the ceiling panel.

(2) Selections

Selections are made using the + and - keys inside the front door. The test mode number is displayed at the top digit of the 7 segment 4 digits nearby.

a : Test mode number
b : Address, etc.
c, d : Data, etc.

9.3.4 PLAYER 1 (UPPER PLAYER) MODE (Display a:1)

9.3.5 PLAYER 2 (LOWER PLAYER) MODE (Display a:2)

- (1) Select the disc to be played back (tray number) using the ↑ and ↓ keys. (Display c, d:00 to 50)
- (2) Start the automatic setting in the player/playback of the disc using the → key.
- (3) Stop the disc being played back, and return to the rack using the ← key.

* The unit can be operated normally by setting a disc in the player, and connecting the service remote control unit to the jack (JA101) of the SYSB unit by wiring.
PLAY, STOP, PAUSE, SKIP, SCAN, STILL, STEP, SEARCH, SIDE, etc.

Press the → key.

- If there are no disc (tray) in the player, sets the discs selected by the ↑ and ↓ keys in the player.
- If the player contains the disc (tray), sets the player into the playback mode.

Press the ← key.

- If the player is in the playback mode, stops the disc.
- If the disc (tray) in the player is during stop, returns the disc (tray) to the rack.

a b c d

a : Test mode number (1) or (2)
b : —
c, d : Disc number (blinks during selection)
(↑, ↓ keys: For selecting disc no.)

TEST	1	Player	1
① DISC	--	NTSC	
② SIDE	A	CLV	
③ CHAP	00		
④ FR/TIME	0.00		
⑤ AUDIO	Digital	stereo	
⑥ TV. sys	NTSC		
⑦ STOP			

Fig. 2

① DISC (Disc number set in the player)

-- : No discs
00 : Disc in standard tray
01 to 50 : Disc in changer tray

② SIDE (Disc side during playback)

[During stop and initial, side A]

A : Side A
B : Side B
A ▶ B : Turning from side A to side B (During play)
B ◀ A : Turning from side B to side A (During play)

③ CHAP (chapter/track during playback)

[00 during stop and initial]

LD CHAP : Chapter no. (00 to 79)
: No chapter (--)
CD/CDV TRK : Track no. (01 to 99)

④ FR/TIME (frame/time during playback) [00 during stop]

LD (CAV) FRAME : Frame no. (00001 to 54000)
LD (CLV) TIME : Time [with seconds] (h:mm:ss)
TIME : Time [No seconds.] (h:mm:ss)
CD/CDV TIME : Time (h:mm:ss)

⑤ AUDIO (Audio switching)

Digital : Digital audio
cx on : Analog audio (CX on)
cx off : Analog audio (CX off)

Stereo : Stereo
1/L : Audio 1/left
2/R : Audio 2/right

⑥ TV sys (TV system) [Only LC-V100]

	NTSC During disc	PAL During disc
NTSC	NTSC	PAL
4.43 NTSC	4.43NTSC	PAL
M. PAL	M. PAL	PAL
(Pseudo PAL)		

The disc discrimination is displayed only during playback.

NTSC : NTSC system disc
PAL : PAL system disc
CAV : Standard disc
CLV : Extended-time disc

⑦ Operation mode display

STOP

PLAY (Including operations which transfer the mode to "PLAY")

PAUSE

STILL (Only CAV disc)

SEARCH 12 34.56 (Chapter/track or frame/time during search)

Press the [ESC] key and then the [TEST] key of the test remote control unit to set the test mode of the player.
Only the remote control unit is valid during the test mode.

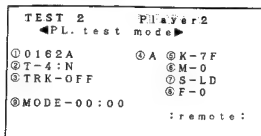


Fig. 3

① 0162A

Player servo mechanism controller (microprocessor) version
Displays frame or time during playback

② T Tilt

0 to C : Position of tilt
N : Neutral
ON : on
OFF : off

③ TRK Tracking on/off

④ A Disc side

A : Side A
B : Side B

⑤ K Remote control unit key input
(Refer to Table. 10: Page 217)

7F : No key input

⑥ M Loading position (0 to 9)

0 : OPEN
1 : LOADING
2 : STANDBY
3 : CLAMP
4 : Not used
5 : TILT -
6 : Not used
7 : TILT+
8 : LIMIT
9 : B CLAMP

⑦ S Slider position

IN
CD
CDV
LD

⑧ F Focus balance mode

0 : During normal playback
1 : During jump

⑨ MODE Operation internal mode and step
(Refer to Table. 11-17: Page 217-220)

9.3.6 CHANGER (MANUAL) MODE

(Display a:3)

- Select a vertical address (tray number) using the ↑ and ↓ keys. (Display c, d:00 to 50)
- Set the tray in the carrier using the → key.
- Return the tray on the carrier to the rack using the ← key.

[TEST 3]



Fig. 4

- PL1 disc (Tray no. in player 1)
 - PL2 disc (Tray no. in player 2)
 - TRAY disc (Tray no. in the outer position)
 - CARR disc (Tray no. on the carrier)
- : Non
00 : Standard tray
01 to 50 : Changer tray

⑤ V. POS (Vertical position)

P1 : Position of player 1
00 : Outer position
01 to 50 : Position of rack
P2 : Position of player 2
-- : Irregular

⑥ mode (Mechanism operation mode)

(Refer to Table. 7: Page 210)

⑦ closed (Outer tray operations)

closed : Has closed
closing : Closing
opened : Has opened
opening : Opening
stop : Stopped halfway


⑧ PD4360C

Changer mechanism microprocessor version

9.3.7 CHANGER (INITIAL) MODE (Display a:4)

- (1) Perform the vertical direction initial using the ↑ and ↓ keys.
- (2) Start initial operations using the → key.
(Clears the current error, and performs initial operations.)
- (3) Stop initial operations using the ← key.

[TEST 4]


 a : Test mode number (4)
 b : —
 c, d : Vertical address

TEST 4		Changer Init	
PL1	disc	—	—
PL2	disc	—	—
OUTR	disc	00	: closed
CARR	disc	—	—
V. POS		20	
mode		80	
PD4360C			

Fig. 5

The contents of the display are the same as Fig. 4.

9.3.8 PLAYER INFORMATION MODE (Display a:5)

- (1) Select the address using the ↑ and ↓ keys. The player information will be displayed.
(Display a: address, Display c, d: player information)
- (2) The disc no. (tray no.) is displayed while the → key is pressed.

[TEST 5]


 a : Test mode number (5)
 b : Address of player information (↑ and ↓ keys)
 c, d : Information code (→ key: Disc no.)

TEST 5		PL info	
code	disc		
1. 83	05		
2. 80	10		
3. C5	00		
4. —			
5. —			
6. —			
7. —			
8. —			

Fig. 6

code : Information code (Refer to Table. 6: Page 210)
 disc : Current disc no.
 — : No disc
 00 : Disc in standard tray
 01 to 50 : Disc in changer tray

9.3.9 ERROR RECORD (Display a:6)

- (1) Select the address using the ↑ and ↓ keys. The error information will be displayed.
(Display b:address, display c, d:error information)
- (2) The disc no. (tray no.) is displayed while the → key is pressed.
(Display b:address, display c, d:tray no.)
- (3) The operation mode is displayed while the ← key is pressed.
(Display b:address, Display c, d:operation mode information)

[TEST 6]


 a : Test mode number (6)
 b : Address of error record (↑ and ↓ keys)
 c, d : Error code
 (→ key: Disc no.)
 (← key: Operation mode)

TEST 6		Error history			
① code	② disc	③ mode	④ posi		
1. 08	25	05	03		
2. 27	38	10	10		
3. A8	05				
4. 28	—	12	P1		
5. 86	12				
6. —					
7. —					
8. —					

Fig. 7

- ① code: Error code (Refer to Table. 5: Page 209)
- ② disc: Current disc or tray no. in the player when player error has occurred or that during operations when mechanism error has occurred.
 — : No disc
 00 to 50 : Disc no. (tray no.)
- ③ mode: Current operation mode (Refer to Table. 7: Page 210)
(None during player error.)
- ④ posi: Current vertical position (None during player error)
 P1 : Position of player 1
 00 : Outer position
 01 to 50 : Position of rack
 P2 : Position of player 2
 — : Irregular

9.3.10 ERROR/INFORMATION CLEAR (Display a:7)

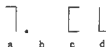
(1) Select the address using the + / - keys.

The error information will be displayed.

(2) Clear all information on the player using the → key.

(3) Clear all errors using the ← key.

[TEST 7]



a : Test mode (7)

b : —

c, d : (→ key : Clears player information)

(← key : Clears the error mode)

When the key is pressed, CL blinks for 3 sec., clears and then lights up for 2 sec.

TEST 7 Error clear			
push ◀ key		push ▶ key	
Error	Pl. info.		
1. 08 5. 86	1. 81 5. —		
2. 27 6. —	2. 80 6. —		
3. A8 7. —	3. C5 7. —		
4. 28 8. —	4. — 8. —		

Fig. 8

When the key to be cleared is pressed, all corresponding data will be cleared (—).

9.3.11 DISPLAY/KEY TEST (Display a:8)

(1) Light up all 7 segment 4 digit LEDs inside the door using the ↑ key.

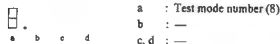
(2) Light up all 7 segment 2 digit LEDs inside the ceiling panel using the ↓ key.

(3) Light up the 7 segment 4 digit LEDs inside the door in order using the ← key.

(4) Light up the 7 segment 2 digit LEDs inside the ceiling panel in order using the → key.

(5) Display the number input at the 7 segment 2 digit LEDs inside the ceiling panel using the numerical keys.

[TEST 8]



a : Test mode number (8)

b : —

c, d : —



STANDBY
/OR

ERR

a f

↑ key

↓ key

→ key

(Lights up one segment each in order)

← key

(Light up one segment each in order)

1 key

2 key

3 key

0 key

O/C key

TEST 8 Display/Key

0 1 2 3 4 5 6 7 8 9 ① Krmc : —
 A B C D E F G H I J ② Kp1 : 3
 K L M N O P Q R S T ③ Kp2 : —
 U V W X Y Z a b c d ④ Kin : up
 e f g h i j k l m n ⑤ Door : open
 o p q r s t u v w x
 y z : ◀ ▶ + - /

Fig. 9

0 to 9, A to Z, a to z, and / are the test outputs of the data for screen displays.

① Krmc Remote control unit key data (Service remote control unit connected to SYSB unit)

The data code is displayed when the A8 (Pioneer commercial LD) code is input.

— : (No input)

② Kp1 When upper keys inside the ceiling panel are pressed, the corresponding key name is displayed.

1, 2, 3, 4, 5

— : (Not pressed)

③ Kp2 When lower keys inside the ceiling panel are pressed, the corresponding key name is displayed.

6, 7, 8, 9, 0

O/C (Open/Close key)

— : (Not pressed)

④ Kin When keys on the board inside the front panel are pressed, the corresponding key name is displayed.

up, down, left, right, mode —

— : (Not pressed)

⑤ Door The condition of the door is displayed in connection with the door switch.

open, close

9.3.12 NUMBER OF SONGS PLAYED BACK, PLAYBACK TIME DISPLAY (Display a:9)

TEST 9		Songs/Hours	
① Songs			
PL1	:	0123456	
PL2	:	0212345	
TOTAL	:	0335801	
② Hours			
PL1	:	001357	h
PL2	:	002468	h
TOTAL	:	003825	h

Fig. 10

① Songs (No. of songs played back)

PL1 (No. of songs played back by player 1)

PL2 (No. of songs played back by player 2)

TOTAL (Total no. of songs played back by players 1 and 2)

No. of playbacks: When each player switches from stop to playback or stop to standby. (No counting in the test mode (including aging))

② Hours (Playback time)

PL1 (Playback time of player 1)

PL2 (Playback time of player 2)

TOTAL (Total playback time of players 1 and 2)

Playback time: When each player is not in the clamp off condition. (No counting in the test mode (including aging))

When the [←] key is pressed for 3 sec. in this mode, the no. of songs played back by player 1 and the playback time will be cleared. When the [→] key is pressed, those of player 2 will be cleared.

- * The total no. of songs played back and the total playback time cannot be cleared. Regarding the playback time, as the internal counter counts within the hour, the total may not be the total of PL1 and PL2 in some cases.

9.3.13 COMMUNICATION MONITOR (Display a: A): Design planning mode

(TEST A)

A . C 1 2
a b c d

- a : Test mode number (A)
- b : Communication monitor of the changer microprocessor and system controller (OK : C lights up, NG : Blank)
- c : Communication monitor of player 1 and the system controller (OK : 1 lights up, NG : Blank)
- d : Communication monitor of player 2 and the system controller (OK : 2 lights up, NG : Blank)

(Communication Monitor Mode)

TEST A		Monitor		12MC
				①②③④
0100A000000000000000000000002A				
0100A0000FFFF000002080000FE				
0100A000000000000000000000002A				
0100A0000FFFF000002080000FE				
1430000A	AAABAI	AOA4	FFFF	
14621300	FFFF	FFFF	FFFF	

Fig. 11

- * When the power supply for the commander is turned on with test A selected, the unit operates in the normal mode. However, the display will be shown constantly and other test modes cannot be set.


Monitors communication with the servo mechanism controller of player 1 and that with the servo mechanism controller, changer mechanism microprocessor and commander of player 2. Errors will be displayed when communication error occurs.

- ① 1 : "1" is displayed when the communication with player 1 is carried out normally.
- ② 2 : "2" is displayed when the communication with player 2 is carried out normally.
- ③ M : "M" is displayed when the communication with the changer mechanism microprocessor is carried out normally.
- ④ C : "C" is displayed when the communication with the commander is carried out normally.
- * "—" is displayed when an error has occurred.

9.3.14 AUTO TEST/AGING

- (1) Select the menu no. using the ↑ and ↓ keys.
- (2) Set the menu no. using the → key.
- (3) Start the operations using the → key.
- (4) Stop the operations and perform initialization using the ← key.

[TEST B]



a : Test mode number (B)
 b : Menu no. (↑ and ↓ keys)
 c : * blinks while operating
 d : —

TEST B	Test/aging
① no. : 01	
② PL1 disc : 14 A01	
③ PL2 disc : 15 A00	
④ TRAY disc : 00 : closed	
⑤ CARR disc : —	
⑥ V. POS : 20	
⑦ mode : 80	
⑧ CYCLES : 001234	

Fig. 12

① no. (Aging menu no.) (Refer to Table. 9)

② PL1 disc (Tray no. in player 1.)

During play : Its side and chapter no.
 — : indicates disc without chapter

③ PL2 disc (Tray no. in player 2.)

During play : Its side and chapter no.
 — : indicates disc without chapter

④ TRAY disc (Tray no. inside the outer position)

⑤ CARR disc (Tray no. on the carrier)

— : None
 00 : Standard tray
 01 to 50 : Changer tray

⑥ V. POS (Vertical position)

P1 : Position of player 1
 00 : Outer position
 01 to 50 : Position of rack
 P2 : Position of player 2
 — : Irregular

⑦ mode (Mechanism operation mode)

(Refer to Table. 7: Page 210)

⑧ closed (Operations of outer tray)

closed : Has closed
 closing : Closing
 opened : Has opened
 opening : Opening
 stop : Stopped halfway

⑧ CYCLES (No. of cycles) : 6 digits

[Aging Menu]

Menu No.	Operations
0	Aging for checks before shipping Plays discs 0 and 1 to 50 in players 1 and 2 for approx. 10 sec. each. The outer tray is regularly opened and closed. No retries when operation errors occur. One cycle for 0 to 50. (Initial 1 at start)
1	Aging for checks before shipping (Operations are the same as Menu no. 0) The no. of retries when errors occur is one for the player and zero for the mechanism.
2	Aging for checks before shipping (Operations are the same as Menu no. 0) The no. of retries when errors occur is one for both the player and the mechanism.
3	Aging for checks before shipping (Operations are the same as Menu no. 0) The no. of retries when errors occur is one to two for the player and four for the mechanism. (Same as no. of retries carried out normally.)
7	Plays discs 10 to 12 in players 1 and 2 for approx. 5 sec. each. The outer tray is regularly opened and closed. The no. of retries when errors occur is the same as that normally carried out. One cycle for 10 to 12. (Initial 1 at start)
6	To and fro operations horizontally at no. 20. If the player contains discs, plays sides A and B alternately for approx. 5 sec. The no. of retries when errors occur is the same as that normally carried out. The cycle no. is counted for each horizontal one way path. (Accumulation count)
9	Plays discs 1 to 50 in players 1 and 2 for approx. 45 sec. each. During this time, the carrier carries out to and fro operations vertically. The no. of retries when errors occur is the same as that normally carried out. One cycle for 0 to 50. (Initial 0, accumulation count)

Table. 9

Note:

- Using discs usually not sold, such as aluminum lined 20 cm LD and 30 cm single plates, for aging will cause errors.
- Aging cannot be carried out if two players have not been set.
- Retries will not be carried out for outer tray and communication errors.

TABLE OF KEYS AND CORRESPONDING CODES

FUNCTION	HEX CODE
0	00
1	01
2	02
3	03
4	04
5	05
6	06
7	07
8	08
9	09
DIG./ANA	0C
CX	0E
TV/LDP	0F
SCAN▶▶	10
SCAN◀◀	11
CHP./TIM	13
■/▲	16
PLAY▶	17
PAUSE||	18
A. MON	1E
+ 10	1F
CHAP	40
FRM./TIM	41
SEARCH	42
DISP	43
REP. B	44
CLEAR	45
SPEED -	46
SPEED +	47
REP. A	48
STEREO	4A
SIDE A	4D
SIDE B	4E
STILL STEP ◀||	50
× 3 ▶	51
CHAPTER SKIP ▶▶	52
CHAPTER SKIP ◀◀	53
STILL STEP ||▶	54
P. RUN	56
◀ × 3	59
TEST	5E
ESC	5F

Table 10

VARIOUS OPERATION MODES OF PLAYER

OPEN MODE 1

Step	Process
0	Internal register clear, spindle stop set, focus off standby Models with both sides
1	Side B Side A During "alpha turning" Tilt up starts Tilt down starts
2	Stands by for tilt up Slider B outside shift starts
3	Stands by for spindle stop
4	Stands by for slider B outside shift
5	Clamp switching B → A starts
6	Stands by for clamp switching B → A
7	Tilt down starts
8	Stands by for tilt down
9	Shift to slider LD sensing position starts
A	Stands by for spindle stop
B	Stands by for shift to slider LD sensing position
C	Unload starts
D	Unloads until out SW is set
E	Sets 100 msec. timer
F	Waits for 100 msec.
	End

Table 11

STANDBY MODE 2

Step	Process
0	Internal register clear, spindle stop set, focus off standby Models with both sides
1	Side B Side A During "alpha turning" Tilt up starts Tilt down starts
2	Stands by for tilt up Slider B outside shift starts
3	Stands by for spindle stop
4	Stands by for slider B outside shift
5	Clamp switching B → A starts
6	Stands by for clamp switching B → A
7	Tilt down starts
8	Stands by for tilt down
9	Shift to slider LD sensing position starts
A	Stands by for spindle stop
B	Stands by for shift to slider LD sensing position
C	Tilt neutral starts
D	Stands by for tilt neutral
	End

Table 12

STOP MODE 3

Step	Process
0	Internal register clear, spindle stop set, focus off standby Models with both sides
1	Side B Side A During "alpha turning" Tilt up starts Tilt down starts
2	Stands by for tilt up Slider B outside shift starts
3	Stands by for spindle stop
4	Stands by for slider B outside shift
5	Clamp switching B→A starts
6	Stands by for clamp switching B→A
7	Tilt down starts
8	Stands by for tilt down
9	Shift to slider LD sensing position starts
A	Stands by for spindle stop
B	Stands by for shift to slider LD sensing position
C	Tilt neutral starts
D	↓
E	Stands by for tilt neutral
	End

Table. 13

DISC SENSING MODE 4

Step	Process
	Stands by for tilt neutral Models with both sides
0	Side A Side B Normal CD direct mode LD sensing CD sensing
1	Shift to slider LD sensing position starts Focus try counter clears
2	Stands by for shift to slider LD sensing position Focus try
3	Focus unlock Focus lock LD presence fixed, ends
4	Focus off
5	Shift to slider CD sensing position starts
6	Stands by for shift to slider CD sensing position Focus try
7	Focus unlock Focus lock CD presence fixed, ends
8	Focus off
9	Shift to slider LD sensing position starts Focus try counter clears
A	Shift to slider LD sensing position starts
B	CD direct mode discrimination CD direct mode Normal
	Focus try
C	Focus unlock Focus lock Focus lock LD presence fixed, ends
D	Focus off
E	Disc absence fixed, ends
F	Shift to slider B inside position starts
10	Stands by for shift to slider B inside position Focus try
11	Focus unlock Focus lock
12	Focus off Side B presence fixed, ends
13	Side B disk absence fixed
	End

Table. 14

SETUP MODE 5

Step	Process		
0	Tilt neutral standby, slider target position setting		
	CD	LD Side A	LD Side B
	Shift to CD TOC position starts	Shift to LD TOC position starts	Shift to LD Side B inside position starts
1	Focus check (including disc overload error (LD + CD))		
	Focus lock (OK)		Focus unlock (NG)
	Stands by for shift to slider target position		LD CD
2	Spindle setting		
	CD set	CDV set	LD set
	60 sec. timer set, spindle RUN starts		
3	Focus check		
	Focus lock (OK)		Focus unlock (NG)
	Stands by for spindle lock while performing mis-clamp check		Clamp error, ends
4	LD		
	CAV/CLV discrimination		CD, CDV
	Not determined	Determined	
5	Focus check		
	Focus lock (OK)		Focus unlock (NG)
	Stands by for code reading		Focus error, ends
6	Slider is moved slowly along the outer and inner circumference until the codes in the PGM area are read. Sets 60 sec. timer after they are read, and returns to step 4.		
	Timer over		Code error, ends
	Focus error, ends		
6	End		

Table 15

TOC READ MODE 6

Step	Process		
0	Divided according to disc types		
	LD		CD, CDV
1	1st address clear, sets 15 sec. timer		
2	Shifts to read-in (and focus time check)		
	24 bits code has been read		Can not be read
	Read-in	PGM area read-out	
	↓	32 tracks REV jump	Play
3	Shifts to PGM area (and focus time check)		
	24 bits code has been read		Can not be read
	PGM area	Read-in	
	↓	16 tracks FWD jump	Play
4	Shifts to read-in (and focus time check)		
	24 bits code has been read		Can not be read
	Read-in	PGM area	
	↓	4 tracks REV jump	Play
5	Plays to PGM area (and focus time check)		
	24 bits code has been read		Can not be read
	PGM area	Read-in	
	Sets 0.5 sec. timer ↓	Play	
	Records 1st address (CH, time) (and focus check)		
6	After 0.5 sec., presence/absence of CH and sec. determined		
	Sets 0.5 sec. timer ↓		
7	TOC (sub code) presence/absence determined (and focus check)		
	TOC present	TOC absence disc fixed and ends if sub code not read for 0.5 sec.	
	↓		
8	Sets 15 sec. timer ↓		
9	Stands by for TOC reading		Time over
	PGM area	Read-in sub code NG	TOC error set ends
	↓	Play	End
A	Sub code OK (+ focus check) NG		
	32 tracks REV jump	Play	
B	Sub code OK (+ focus check) NG		
	32 tracks REV jump	Play	
C	Sub code OK (+ focus check) NG		
	32 tracks REV jump	Play	
D	Sub code OK (+ focus check) NG		
	32 tracks REV jump	Play	
E	To step 9		

Table 16

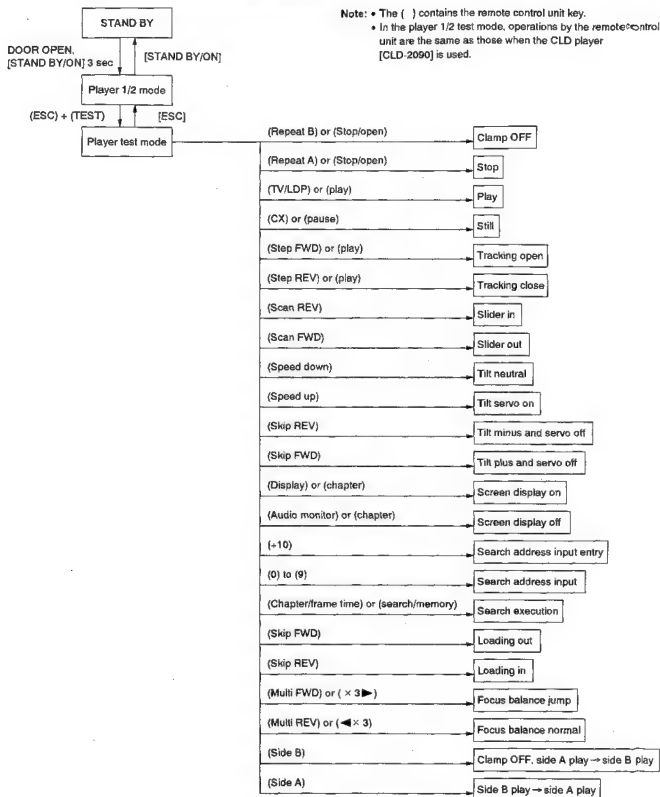
SEARCH MODE 8

Step	Process				
	Focus on			Focus off	
	Sets 15 sec. timer			Recover error, ends	
	Divided according to type of disc search target				
0	CDV			CD	LD
	Track search (Waits for absolute time)				
	A ↔ V A ↔ V V ↔ A V ↔ A				
	↓				
1	Focus try counter clears, spindle stop starts, slider shift starts				
	To A → V CDV TOC position		To V → A CD TOC position		
2	Stands by for slider shift				
	Spindle stop standby → Disc overload (clamp) error occurs if does not stop even after 1.6 seconds, ends				
	Focus lock (sets 15 sec. timer set)		Focus try		
	A. CD spindle set	V. CDV spindle set	If unsuccessful after 4 tries, recover error occurs, ends		
3	Stands by for spindle lock				
	Stands by for sub code reading ↓				
4	Sets track count 10 times				
5	Slider shifts while performing track count				
6	Difference from target address above approximately 1 min.			Approaching within approximately 1 min.	
	Slider shifts				
7	Slider shifts until target address is crossed (H SCAN)				
8	Slider shifts until target address is crossed (L SCAN)				
	↓				
9	32 tracks jump until target address is crossed				
A	4 tracks jump until target address is crossed Sets 5 sec. timer				
E	4 tracks jump until near target address			Timer check NG → Search error, ends	
C	Play until target address reached				
	Time out		Reached		
	LD, CDV-V	CD, CDV-A	LD, CDV-V		CD, CDV-A
	Search error, ends	Spindle lock	Unlock		
			Ends	LD	CDV-V
			To step B		REV jump
D	4 tracks jump until near target address Time check NG → search error, ends				
E	Plays until target address reached				
F	When new search target input during searching, returns to step 0 after spindle locks.				

Table. 17

9.4 PLAYER TEST MODE

(PLAYER TEST MODE OPERATIONS OUTLINE DIAGRAM)



Controlling the Test Mode of the Player

● Setting the test mode of the player

In test mode 1/2 (player 1/2 mode), press [ESC] and [TEST] keys in order. The test mode of the player will be set.

Note: Be sure to load the test disc in the player beforehand.

The video/audio function automatically switches to the player to be tested.

(1) Clamp OFF (Open)

- Press the [repeat B] key (44H) of the remote control unit.
- Or, in the stop state, press the [stop/open (■/▲)] key of the remote control unit.

(2) Stop

- Press the [repeat A] key (48H) of the remote control unit.
- Or, in the play state, press the [stop/open (■/▲)] key of the remote control unit.
- Or, in the clamp OFF state, press the [play (▶)] key (17H) of the remote control unit.

(3) Play (spindle start up)

- Press the [TV/LDP] key (0FH) of the remote control unit.
- Or, in the stop state (clamp state), press the [play (▶)] key of the remote control unit.

- Tracking will be started up in the open state.
- The tilt in the initial state is neutral.
- According to the position of the slider during start up, the disc type is discriminated.

(4) Still

- Press the [CX] key (0EH) of the remote control unit in the play state.
- Or in the play state, press the [pause (■)] key (18H) of the remote control unit. Each time it is pressed, play/still switches alternately.

(5) Tracking open

- In the play state, press the [step FWD] key (54H) of the remote control unit.
- Or in the play state, press the [play (▶)] key (17H) of the remote control unit. Each time either key is pressed, open/close switches alternately.

(6) Tracking close

- In the play state, press the [step REV] key (50H) of the remote control unit.
- In the play state, press the [play (▶)] key (17H) of the remote control unit. Each time either key is pressed, open/close switches alternately.

(7) Slider in

- Press the [scan REV] key (11H) of the remote control unit.

(8) Slider out

- Press the [scan FWD] key (10H) of the remote control unit.

(9) Tilt neutral

- Press the [speed down] key (46H) of the remote control unit.
- The tilt in the initial state is neutral.

(10) Servo on

- Press the [speed up] key (47H) of the remote control unit.

(11) Tilt minus and servo off

- Press the [skip REV] key (53H) of the remote control unit in states other than "clamp open".

(12) Tilt plus and servo off

- Press the [skip FWD] key (52H) of the remote control unit in states other than "clamp open".

(13) Screen display on

- Press the [display] key (43H) of the remote control unit.
- Or press the [chapter] key (40H) of the remote control unit. Each time it is pressed, the display turns on/off alternately.

- The screen display is on in the initial state.

(14) Screen display off

- Press the [audio monitor] key (1EH) of the remote control unit.
- Or press the [chapter] key (40H) of the remote control unit. Each time it is pressed, the display turns on/off alternately.

(15) Search address input entry

- In the play state, press the [+10] key (1FH) of the remote control unit.

- The address searched previously is displayed as the initial state. When search is executed at this time, previous addresses can be searched.

(16) Search address input

- Press the [0] to [9] keys of the remote control unit.
- When the number key is to be input for the first time, clear the input address before inputting.

(17) Search execution

- Press the [chapter/frame time] key (13H) of the remote control unit.
- Or press the [search/memory] key (42H) of the remote control unit.

(18) Loading out

- In the open state, press the [skip FWD] key (53H) of the remote control unit.

(19) Loading in

- In the open state, press the [skip REV] key (52H) of the remote control unit.

(20) Focus balance jump

- a. During play, press the [Multi FWD] key (58H) ([$\times 3 \blacktriangleright$] key of the LD remote control unit for service) of the remote control unit.
- b. Or during play, press the [highlight/intro.] key (5AH) or the [frame/time] key (41H) of the remote control unit. Each time either key is pressed, jump/normal switches alternately.

(21) Focus balance normal

- a. During play, press the [Multi REV] key (55H) ([$\blacktriangleleft \times 3$] key for the service remote control unit) of the remote control unit.
- b. Or during play, press the [highlight/intro.] key (5AH), the [frame/time] key (41H) of the remote control unit. Each time either key is pressed, jump/normal switches alternately.

(22) Clamp OFF, side A play \rightarrow side B play

- a. In clamp OFF or side A play state, press the [side B] key (4EH) of the remote control unit.

(23) Side B play \rightarrow side A play

- a. In the side B play state, press the [side A] key (4DH) of the remote control unit.

9.5 Mechanism Error Codes

Error Code	Contents	Retry Operations	Possible Causes	To Recover
02	Incorrect counting of vertical addresses (Mis-count)	Positioning after vertical initialization in reverse direction	<ul style="list-style-type: none"> Faulty vertical encoder input of changer controller Foreign particles in vertical address slit 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4 Carry out the vertical operations of test 3 and check that the vertical addresses are being counted correctly.
04	Error in vertical operations (Vertical limit SW is on)	Positioning after vertical initialization in reverse direction	<ul style="list-style-type: none"> Because of faulty elevating motor control, the motor could not stop and has hit against something Faulty limit SW input 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4 Carry out the vertical operations of test 3 and check that the motor does not hit against anything
07	Time-over of vertical operations <ul style="list-style-type: none"> Time-over of the vertical operations of the changer controller Time-out instead of overloading of the elevating motor <ul style="list-style-type: none"> Difference in vertical positions Difference between the target position after completing operations and current position Time-out of the system controller in vertical operations Time-out at the system controller without errors occurring in the changer controller 	Positioning after vertical initialization in the reverse direction or in the direction near the vertical address	<ul style="list-style-type: none"> Elevating motor does not operate Caught due to foreign particles, etc. in the vertical direction The carrier base is not tilting correctly The changer controller is not operating (Related to power supply) Vertical time-out retry was repeated several times continuously and the elevating motor has over-heated (Elevating motor cooling standby mode) 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4 Carry out the vertical operations of test 3 and check if operations are normal After more than 10 minutes, turn the power on However, the automatic recovery of test 4 can be performed immediately
08	Overload of vertical motor <ul style="list-style-type: none"> Overload during vertical operations Noise was received during horizontal operations, and overload was detected 	Positioning after vertical initialization in the reverse direction Horizontal operations in reverse direction → vertical initialization → positioning → original horizontal operations	<ul style="list-style-type: none"> Caught due to foreign particles, etc. in the vertical direction, and overload was detected Noise was received during horizontal operations and overload detected 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4 Perform the vertical operations/horizontal operations of test 3, and check if operations are normal
09	Error in outer tray operations <ul style="list-style-type: none"> Outer stopped halfway <ul style="list-style-type: none"> Power on operations ended abnormally 	Usually reversal operations are performed four times Reversal operations are not performed in aging operations Not performed From here, only the power key is accepted	<ul style="list-style-type: none"> Caught in the outer Mechanism load of the outer is excessive Faulty outer motor operations Faulty outer plunger operations The standard tray is not in the outer even though the unit was started up normally The standard tray is in the outer even though the unit was started up after the disc had been replaced. 	<ul style="list-style-type: none"> Operate open/close key Turn power off and then on

Error Code	Contents	Retry Operations	Possible Causes	To Recover
12	Abnormal EEPROM	Not performed	<ul style="list-style-type: none"> Damaged by static electricity, etc. Affected by noises, etc. while reading or writing 	<ul style="list-style-type: none"> Replace EEPROM <p>Before replacing...</p> <ol style="list-style-type: none"> Initialize mechanism with the automatic recovery of test 4 Fill in the player's service record label with the songs played and play time of the player <p>After replacing</p> <ol style="list-style-type: none"> Perform the all-clear of the EEPROM As all disc information has been cleared, replace discs (1 to 50) and reset disc presence/absence
27	Horizontal operation time-over <ul style="list-style-type: none"> Time-over of the horizontal operations of the changer controller Difference in the status of the carrier base when operations were completed Time-out of the system controller of horizontal operations Time-out at the system controller without errors occurring in the changer controller	Horizontal operations in the reverse direction → vertical initial → positioning → original horizontal operations	<ul style="list-style-type: none"> The vertical positions of the carrier base, player, outer tray and rack are displaced Mechanism load in the horizontal direction is excessive Loading motor is not operating Changer controller is not operating (related to power supply) Trying to place tray where there is already a tray Claws holding the tray in place have broken off 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4 Perform the horizontal operations of test 3 and check if operations are normal
28	Time-over in the carrier base lock pin operations	Positioning after vertical initialization in the reverse direction or direction near the vertical address	<ul style="list-style-type: none"> When the carrier base is elevating without carrying any tray, the lock pin does not come off or does not go into the pin hole The loading motor is not operating The changer controller is not operating (related to power supply) 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4 Perform the vertical operations of test 3 and check if operations are normal
41	Error in the communication with the changer controller	<ul style="list-style-type: none"> After the changer controller is reset from L to H, stands by for communication recovery for 1 second. This is performed four times. If the communication does not recover, it is taken as communication error. If it recovers, mechanism retry is performed. <p>If vertical operations are performed when a communication error has been generated, positioning is carried out after vertical initialization in the reverse direction or direction near the vertical address</p> <p>If horizontal operations are performed when a communication error has been generated, horizontal operations in the reverse direction are performed, positioning is carried out after vertical initialization, and then the original horizontal operations are performed</p>	<ul style="list-style-type: none"> Faulty communication line connection Communication line is fixed to H, L Noise on the communication line The changer controller is not operating (related to power supply) 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4

Error Code	Contents	Retry Operations	Possible Causes	To Recover
42 43	Error in the communication with the player mechanism controller 42: Player 1 43: Player 2	<ul style="list-style-type: none"> The servo mechanism controller is reset from L → H. After this, communication is checked if it has been successful or not for approximately 3 continuous seconds. Stop after recovery → clamp off 	<ul style="list-style-type: none"> Faulty communication line connection Communication line is fixed to H, L Noise on the communication line The servo mechanism controller is not operating (related to power supply) 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4
44	Error in changer controller operations <ul style="list-style-type: none"> "Operations not possible" has been received in respect to the command issued from the changer controller The system controller has detected mechanism overrun 	<ul style="list-style-type: none"> Not performed The same retry operations as error 41 are performed 	<ul style="list-style-type: none"> The horizontal operations status was generated when vertical operations were started The vertical operations status was generated when horizontal operations were started Difference between the operations of the changer controller and that of the system controller 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4
45	Faulty disc sensor	Not performed	<ul style="list-style-type: none"> Faulty connection Faulty element 	<ul style="list-style-type: none"> Turn off and then on the power or perform the automatic recovery of test 4
46 47	Aging of test mode B The player cannot play during operations 46: Player 1 47: Player 2	<ul style="list-style-type: none"> Retry operations are not performed at B-0. Retry operations are performed once at B-1, 2. Normal retry operations are performed at B-3 Mis-clamp generation: Start-up operations are performed again after clamp off The spindle could not be locked at start up "Unfocused" at start-up Time-over of search operations Time-over of TOC read operations Time-over when disc was started up Start-up operations again after stop No search chapter: Read-out when search was attempted Determined as "no disc" because could not focus No retry 	<ul style="list-style-type: none"> Although a disc judged as containing discs was played, the player was stopped or clamped off, and the play could not be carried out Player mechanism error or player communication error has occurred Disc is scratched or dirty 	<ul style="list-style-type: none"> Perform the automatic recovery of test 4

Table. 18

9.6 LC-V200/100 CLD PLAYER ERROR CODES

Error Code		Item	Description
PL1	PL2		
96	D6	Meaning Retry Operation Generation Possible Causes	Time-over of clamp release If player operations do not end within approximately 10 seconds after clamp release operations were started, the clamp release operations are started again after re-clamping once If clamp release operations do not end even after retry operations have been repeated twice (1) The loading system mechanism has malfunctioned or is caught (2) Malfunction of loading/tilt motor, or motor drive circuit (3) Disconnection/faulty connection in the route between [TILT DRV terminal] of PD0162A1, motor driver, and loading/tilt motor (4) Malfunction of SW1, SW2, or SW3 (5) Disconnection/faulty connection in the route between each terminal [SW1], [SW2], [SW3] of PD0162A1 and SW1, SW2, SW3
97	D7	Meaning Retry Operation Generation Possible Causes	Time-over of clamp operation If player operations do not end within approximately 10 seconds after clamp operations were started, the clamp operations are started again after re-clamping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-over of clamp release"
A7	E7	Meaning Retry Operation Generation Possible Causes	Time-over of side A/B switching operations If player operations do not end within 10 seconds after side A/B switching operations were started, side A/B switching operations are started again If side A/B switching operations do not end even after retry operations have been repeated twice (1) The alpha turn mechanism has malfunctioned or is caught (2) Malfunction of slider motor, or motor drive circuit (3) Disconnection/faulty connection in the route between [SLD DRV terminal] of PD0162A1, motor driver and slider motor (4) Malfunction of PARK1, PARK2, or PARK3 switch (5) Disconnection/faulty connection in the route between [PARK1] terminal of PD0162A1 and PARK1, PARK2, PARK3 switches
A8	E8	Meaning Retry Operation Generation Possible Causes	Time-over of side A slider operations If player operations do not end within 10 seconds after slider transfer operations were started when side A of the disc is started up, slider transfer operations are started again after stopping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-out of side A/B switching operations"
A9	E9	Meaning Retry Operation Generation Possible Causes	Time-over of side B slider operations If player operations do not end within 10 seconds after slider transfer operations were started when side B of the disc is started up, slider transfer operations are started again after stopping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-out of side A/B switching operations"
B3	E3	Meaning Retry Operation Generation Possible Causes	Time-over of the clamp release of the player at power supply on If player operations do not end within 10 seconds after clamp release operations were started during mechanism initialization operations at power supply on, clamp release operations are started again after re-clamping once If clamp release operations do not end even after retry operations have been repeated twice Same as "Time-over of clamp release"
42	43	Meaning Retry Operation Generation Possible Causes	Communication error with player 1/2 Resets the player (Approx. 0.4 seconds) (1) If there is no communication request from the player for approximately 3 continuous seconds (2) There is communication request from the player, but communication was unsuccessful for approximately 3 continuous seconds due to noise, etc. (1) Disconnection/faulty connection in the route between [SHAKE], [SH1], [SO1], and [SCK1] terminals of PD0162A1 and communication terminal of system controller (2) Noise on the above communication line (3) PD0162A1 is not operating (Malfunction/power not supplied/clock not supplied, etc.)

Table. 19

• LC-V200/100 CLD PLAYER Information Codes

Information Code				Item	Description
PL1		PL2			
Side A	Side B	Side A	Side B		
80	88	C0	C8	Meaning Retry Operation Generation Possible Causes	TRANSIT SW Detection None The "TRANSIT SW detection" code has been transmitted from the player mechanism microprocessor PD0162A1 at times other than power on initialization (1) Loading system mechanism is no longer in the "clamp off" condition when it should be. (2) SW1, SW2, and SW3 faults. (3) The input voltage level of the "PARK1" pin of PD0162A1 is due to some reason in a period (1.05 to 2.43V) above 300 msec. (4) Fault of the SWs for detecting the slider position-PARK1, PARK2, and PARK3. (5) Disconnection/faulty connection of the route between the PARK1 pin of PD0162A1 and each SW-PARK1, PARK2, and PARK3.
81	89	C1	C9	Meaning Retry Operation Generation Possible Causes	Could not focus and determined as no disc None When could not focus in operations detecting the presence/absence of a disc when it is started up (1) Attempted to start up tray number with no disc (2) Disc so dirty or scratched that could not focus (3) Disc so displaced or tilted due to mis-clamp that could not focus (4) Malfunction/faulty connection of focus system (pickup, circuit)
83	8B	C3	CB	Meaning Retry Operation Generation Possible Causes	Read-out occurred when search was attempted None When the read-out area is entered while searching (1) Chapter not recorded on a disc without TOC has been specified (2) While searching, the phillips code recorded on the disc could not be read (scratches, dirt) and the search target was passed
84	8C	C4	CC	Meaning Retry Operation Generation Possible Causes	Chapter to be searched does not exist None When a chapter not recorded on a disc has been specified (1) A chapter not recorded on a disc with TOC (including CD, CDV) has been specified (2) Songs on side B of the CD, CDV, or 8 inch LD have been specified (3) A chapter not recorded on the disc has been specified, without returning the disc once (soon) from the same side (final song known) of the disc which became the above "Read-out occurred when search was attempted".
85	8D	C5	CD	Meaning Retry Operation Generation Possible Causes	The spindle could not be locked at start up After the player is stopped once (with clamp on), startup operations are re-started When spindle cannot be locked even when retry operations have been carried out (once) (1) The phillips code and sub code recorded on the disc cannot be read (causes related to the disc such as scratches, dirt, etc. can be considered) (2) The built-in phillips decoder circuit of PD0162A1 or PD0162A1 has broken down and the phillips code cannot be read (3) Malfunction/faulty connections of spindle system (motor driver, servo circuit)
86			C8	Meaning Retry Operation Generation Possible Causes	A side different from the commander has been played None (the chapter specified will be played) In respect to the side specified, the phillips code information of the disc side started up is on the opposite side (1) The disc has been set inside out (2) The phillips code information recorded on the disc started up is incorrect (3) The built-in phillips decoder circuit of PD0162A1 or PD0162A1 has broken down (4) In respect to the CD, CDV, 8 inch LD, side B has been specified in test mode B (aging) (At this time, side A is played.)

Information Code				Item	Description
PL1		PL2			
Side A	Side B	Side A	Side B		
87	8F	C7	CF	Meaning Retry Operation Generation Possible Causes	Time-over of disc startup operations After stopping the player once (with clamp on), start-up operations are started again When the disc is not played even after errors have not been detected for approximately 1 minute during disc start-up in the clamp off state The focus system, spindle system, phillips decoder system, EFM decoder system, loading/tilt drive system (SW, mechanism, circuit), slider drive system (SW, mechanism, circuit) have been over-used and operations cannot end normally
90	98	D0	D8	Meaning Retry Operation Generation Possible Causes	Mis-clamp After releasing the clamp of the player once, start-up operations are started again When the same mis-clamp has been detected even after retry operations have been repeated twice (1) Error in clamp mechanism (loose, faulty, etc.) (2) Noise in the [TZC] terminal of PD0162A1 or the connection of this line is faulty
92	9A	D2	DA	Meaning Retry Operation Generation Possible Causes	"Unfocused" at start up After stopping the player once (with clamp on), start-up operations are started again Focus cannot be locked even after retry operations (once) have been performed (1) Disc is so dirty or scratched that could not focus (2) Due to incomplete clamp, the disc has tilted, and "unfocused" at start up (3) Malfunction/faulty disconnection of focus system (pickup, circuit)
B0	B8	F0	F8	Meaning Retry Operation Generation Possible Causes	Time-over of search operations After stopping the player once (with clamp on), search operations are re-started When search operations do not end even after retry operations (once) have been performed. (1) Due to causes related to the disc such as scratches, dirt, malfunction of PD0162A1 and CX2500AQ, faulty connection of [DATA] terminal of PD0162A1, or noise, the phillips code or sub code recorded on the disc cannot be read and the search target was not reached (2) The phillips code could not be properly read because of noise on the [DATA] terminal of PD0162A1 or faulty connection of the line (3) CXD2500AQ is faulty and the sub codes cannot be read
B5	BD	F5	FD	Meaning Retry Operation Generation Possible Causes	Play cannot be continued After stopping the player once (with clamp on), search operations are started again to the point determined as where play cannot be continued When determining that play cannot be continued again after performing retry operations (once) Errors in the focus system, spindle system, phillips decoder system, or EFM decoder system have occurred (sometimes the disc may be the cause)
B6	BE	F6	FE	Meaning Retry Operation Generation Possible Causes	Time-over of TOC read operations After stopping the player once (with clamp on), TOC read operations are started again When TOC read operations do not end even after retry operations have been performed (once) (1) The sub codes recorded on the disc cannot be read (causes related to the disc such as scratches, dirt, etc. can be considered) (2) "Unfocused" after TOC read operations were started

Table 20

9.7 Initialization of Changer Mechanism

What is initialization of the changer mechanism

- No trays in players 1 and 2
- Standard tray (black) in the outer
- No tray in the carrier base and locked at "home" position (No.20)

To initialize the changer mechanism, carry out automatic recovery by using the [→] key of test mode 4. Errors will be cleared and the mechanism will automatically be initialized.

Normally, it is initialized by this mode.

If the changer mechanism cannot be initialized by automatic recovery, mechanical or electrical causes can be suspected. Correct the problem and carry out the automatic recovery again.

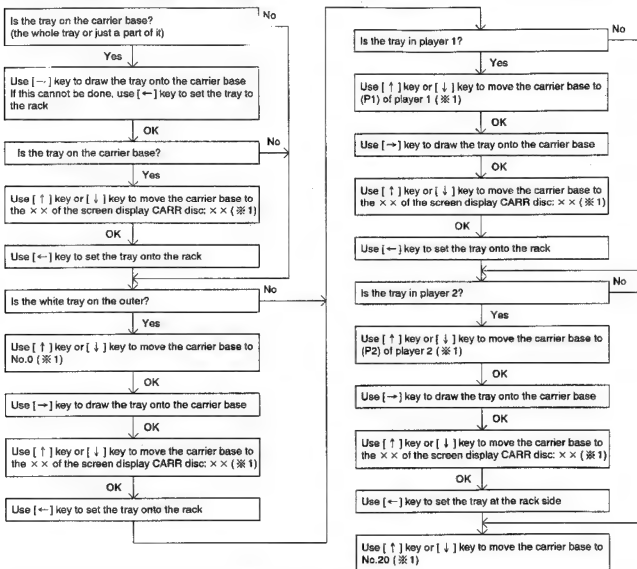
[Initialization of the changer mechanism by manual operations of test mode 3]

When initializing the changer mechanism using manual operations of test mode 3 instead of automatic recovery, perform the following.

Observe the OSD display at this time. Basically, automatic

recovery operations are performed manually.

To clear error displays after mechanism initialization has been completed properly, carry out the automatic recovery of test mode 4.



※1: When the position of the carrier base is not fixed, the carrier base may perform vertical initial operations (moves to player 1 or 2 at low speed).

In this case, it will move to the target position after vertical initial operations have completed.

9.8 SYSB UNIT TEST MODE SPECIFICATIONS

1. Preparations/Connections

The following preparations are necessary to operate the TEST mode.

Name	Connected to
Power supply +10V	CN12 ④
+5V	①
GND	②
For STEP transmission SW	CN54 ①
GND	②
For TEST	IC109 ⑩

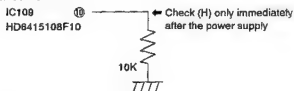
* In the TEST mode, do not connect other units as almost all ports will be switched to the output port.

2. Checking STEP

[STEP-1 Entering TEST mode]

- The TEST terminal for checking the unit is connected to UNSWSV, and +10V and +5V are started up together.

TEST terminal



[STEP-2 Checking the RAM]

- The writing of the external RAM is verified.
Address E002 to fe50
Data 55, aa
- If satisfactory, execute STEP-3.

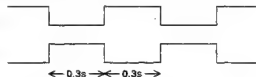
[STEP-3, 4, 5, 6, 7 Checking terminals]

- When the door SW is pressed, the step mode moves onto STEPS 4, 5, 6, 7, and 8 in order.

	3	4	5	6	7		3	4	5	6	7
CN53						CN35/36					
① XMCRST	○	○	○	○	○	① UNSW+5V					
② MCS0	●	●	●	●	●	② KEYINB					
③ MCS1	H	H	H	H	H	③ KEYINA					
④ MCSCCK	L	H	H	H	H	④ SWSV					
⑤ MCSCS	●	●	●	●	●	⑤ GND					
CN25						⑥ DSPDATA	○	○	○	○	○
② OSDSCCK	H	H	H	H	●	⑦ EXPSCCK	●	○	○	○	○
③ XOSDRST	●	●	●	●	●	⑧ DSPCS2	H	H	H	H	H
④ XOSDCS	○	○	○	○	○	⑨ DSPCS1	H	H	L	L	L
⑤ OSDSO	●	●	●	●	●	⑩ POWERSW	○	○	○	○	○
CN33											
① SHAKE1	●	L	○	○	○	(08)	○				
② LDPSO	●	●	○	○	○	(09)	●				
③ LDPSI	H	L	○	H	H	(10) TEST	(H H H H H)				
④ LDPSCK	H	L	○	H	H	(55)	●				
⑤ XP1RST	○	○	○	○	○						
CN34											
① SHAKE2	○	L	○	○	○	(60)	○				
② LDPSO	●	●	○	○	○	(61)	●				
③ LDPSI	H	L	○	H	H	(62)	○				
④ LDPSCK	H	L	○	H	H	(63)	●				
⑤ XP2RST	●	●	○	○	○	(65)	○				
CN32											
① TXD	●	●	○	○	○	(66)	●				
② RXD	○	○	○	○	○	(67)	○				
③ XPOW	○	○	○	○	○	(68)	○				
④ XPLAY	○	○	○	○	○	(69)	○				
⑤ THROUGH	●	●	○	○	○	(70)	●				
CN12											
① XPCONT	○	○	○	○	○	(76)	○				
CN24											
② EXP1DATA	●	●	○	○	○	(77)	●				
③ EXPSCCK	●	●	○	○	○						
④ NTSC/PAL	●	●	○	○	○						
REMCON	○	○	○	○	○						

○ mark

● mark



[STEP-8 Checking/initializing the EEPROM]

- The writing of the EEPROM is verified, and the initial data is written.
- If satisfactory, LED is displayed. (012345 light up, point, STANDBY and ERROR blink)
- When S301 is pressed, the test mode moves onto STEP-9.

[STEP-9 Checking keys/displays]

- When the door SW is pressed, the test mode moves onto STEP-10.
- The following are displayed when S301 to S107 are pressed.
(Multiple pressing causes errors.)

	D301	D105	D104	D303	D302
Nothing pressed	-	-	-	-	-
S301	1	2	3	4	5
S302	2	3	4	5	6
S303	3	4	5	6	7
S304	4	5	6	7	8
S305	5	6	7	8	9
S306	6	7	8	9	0
S307	7	8	9	0	1
S308	8	9	0	1	2
S309	9	0	1	2	3
S310	0	1	2	3	4
S311	1	2	3	4	5
S312	2	3	4	5	6
S101	8.			*	*
S102	8. 8.			*	*
S103	8. 8.			*	*
S104	8. 8. 8. 8.			*	*
S105	8. 8. 8. 8. 8.			*	*
S106	8. 8. 8. 8. 8. 8.			*	*

[STEP-10 End Display]

- The segments of points will blink alternately (approx. 500 msec.)

[When errors occur, error codes]

- Errors detected at each step are displayed blinking at D304 and the test mode is stopped.
- Some cannot be displayed due to hardware restrictions.

50:	External RAM verify error
51:	
52:	
53:	
54:	
55:	EEPROM : BUSY error
56:	: ECC error
57:	: Verify error
58:	: Cannot initialize and write
59:	: Initialization data verify error
60:	SW of KEYA is pressed
61:	SW of KEYB is pressed
62:	SW of KEYC is pressed
63:	S312 is pressed
64:	Door SW is pressed
65:	
66:	
67:	
68:	

10. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

10.1 HD6415108F10 (IC109) SYSTEM MICROPROCESSOR

● Pin Function Table

Pin No.	Name	Function	Pin No.	Name	Function
1	XRES	Reset input	31	A10	Address output
2	NMI	GND	32	A11	Address output
3	VSS	GND	33	A12	Address output
4	XMCRST	Reset output of changer mechanism controller	34	A13	Address output
5	XMCCS	Communication chip select output of changer mechanism controller	35	A14	Address output
6	XCGCS	Communication chip select output of OSD IC	36	A15	Address output
7	XCGRST	Reset output of OSD IC	37	VSS	GND
8	—	—	38	A16	Address output
9	—	—	39	A17	—
10	—	(Pin for checker) pull down	40	A18	—
11	EEPCS	Communication chip select output of EEPROM	41	A19	—
12	D0	Data input/output	42	A20	—
13	D1	Data input/output	43	A21	—
14	D2	Data input/output	44	A22	—
15	D3	Data input/output	45	A23	—
16	D4	Data input/output	46	VSS	GND
17	D5	Data input/output	47	DSPSELA	PD0012A select A output
18	D6	Data input/output	48	DSPSELB	PD0012A select B output
19	D7	Data input/output	49	DSPSELC	PD0012A select C output
20	VSS	GND	50	EXPSCCK	Clock output of communication with AV expansion IC
21	A0	Address output	51	DSPDATA	Data output of communication with PD0012A
22	A1	Address output	52	EXPDATA1	Data 1 output of communication with AV expansion IC
23	A2	Address output	53	EXPDATA2	Data 2 output of communication with AV expansion IC
24	A3	Address output	54	—	—
25	A4	Address output	55	VCC	Power supply
26	A5	Address output	56	THRU	AV signal output through switching
27	A6	Address output	57	XPWRON	Power control
28	A7	Address output	58	XPLAY	Play discrimination signal to commander
29	A8	Address output	59	NTSC/PAL	NTSC/PAL switching
30	A9	Address output	60	XREQ	Not used

Pin No.	Name	Function	Pin No.	Name	Function
61	XRST0	Not used	87	AVCC	Power supply
62	XR/W	Not used	88	VCC	Power supply
63	MUTE	Not used	89	XIRQ0	Test mode remote control unit input
64	VSS	GND	90	SHAKE1	Player 1 communication shake
65	DATA0	Not used	91	SHAKE2	Player 2 communication shake
66	DATA1	Not used	92	SCK	Player communication clock
67	DATA2	Not used	93	RXD	Commander communication (RS422) reception
68	DATA3	Not used	94	TXD	Commander communication (RS422) transmission
69	—	—	95	SI	communication data input
70	XEXIST	Not used	96	SO	communication data output
71	SCISELA	Communication select A	97	VSS	GND
72	SCISELB	Communication select B	98	EXTAL	Clock input
73	PWRSW	Standby/On switch input	99	XTAL	Clock input
74	DOOR	Door switch input	100	VSS	GND
75	XPWRC	Power on input	101	⌀	—
76	XP1CDET	Not used	102	E	—
77	XP2CDET	Not used	103	XAS	—
78	XPRST2	PLayer 2 reset output	104	XRD	External memory reading control output
79	XPRST1	PLayer 1 reset output	105	XHWR	External memory writing control output
80	—	—	106	XLWR	External memory writing control output
81	VSS	GND	107	XFRSH	—
82	AVSS	GND	108	VCC	Power supply
83	KEYINA	Key input A	109	MD0	Mode setting
84	KEYINB	Key input B	110	MD1	Mode setting
85	KEYINC	Key input C	111	MD2	Mode setting
86	DCIN	DC power supply input	112	STBY	Power supply connection

* AV: AUDIO, VIDEO

The system microprocessor (HD6415108F10) accesses the external RAM and ROM and mainly performs the following operations at a period of approximately 40 msec. when the power is turned on.

Operation	Details
Key inputs	Analyzes key inputs (analog data)
Remote control unit inputs	Analyzes wired remote control unit key inputs for the player test mode
Communication with commander	Transmits/receives commands/status (RS422) in asynchronous format
Changer mechanism control	Communicates with the mechanism microprocessor PD4360 and performs the communication which controls the changer mechanism at a period of approximately 40 msec.
EEPROM read/write	Writes/reads the disc presence/absence information, play information, mechanism condition, error, etc. in the EEPROM
On screen displays (OSD)	Transmits the screen display data to the OSD-IC (1 line/40 msec., the real time data during play is on-time)
Player control	Controls the two players Communication is carried out according to the following period for each player During Stop : Every 24 msec. During CD play : Every 13.3 msec. (sync) During LD, CDV (V) play : Every 16.5 msec. (sync) for NTSC : Every 20 msec. (sync) for PAL During SCAN : Every sync reading
Audio, video input/output control	Switches the input/output of audio and video
LED displays	Outputs indicator, 7 segment LED displays

● COMMUNICATIONS AROUND THE SYSTEM MICROPROCESSOR

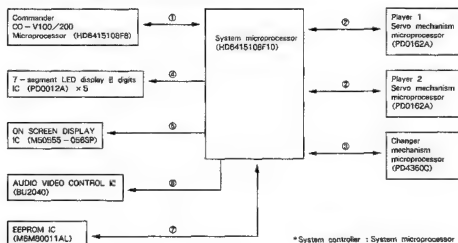


Fig 1

- ① Reservation and playback, etc. commands are transmitted and received from the commander, and status from the system controller.
- ② Player playback and stop commands are transmitted and received from the system controller, and status and disc information from the player.
- ③ Disc carrier, outer tray open/close commands are transmitted and received from the system controller, and status (vertical address, etc.) from the changer mechanism microprocessor.
- ④ The 7-segment LED display data is transmitted from the system controller.
- ⑤ The display data is transmitted from the system controller to the onscreen (screen display) IC.
- ⑥ The data is transmitted from the system controller to the expansion IC (BU2040) to switch the audio and video signals.
- ⑦ To memorize information during operations and the playback data of the player, the system controller transmits data to and receives data from the EEPROM IC (nonvolatile memory).

- Example of communication waveform
(All signals are 0 to 5V, 5V/div)

① System controller ↔ Commander

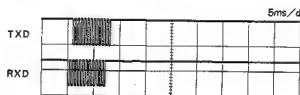


Fig 2

The TXD signal is behind the RXD by approximately 1 msec.
The communication byte number differs according to the communication contents.

② System Microprocessor ↔ Player Servo Mechanism Microprocessor

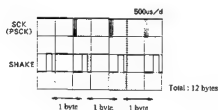


Fig 3

The communication byte number is 12 bytes.

③ System Microprocessor ↔ Changer Mechanism Microprocessor

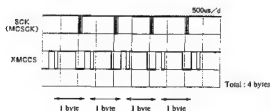


Fig 4

The communication byte number is 4 bytes.

⑤ System Microprocessor ↔ OSDIC

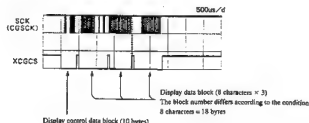


Fig 5

④ ⑥ System Microprocessor → BU2040 → PD0012A

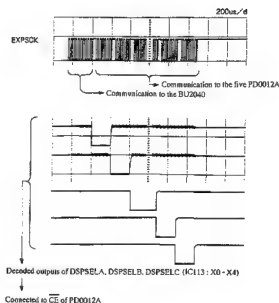


Fig 6

⑦ System Microprocessor ↔ EEPROM IC (M6M80011AL)



Fig 7

EEPROM data reading when outlet is on (64 words)
Outlet on

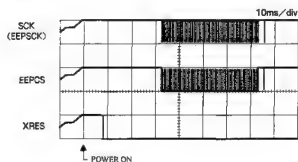
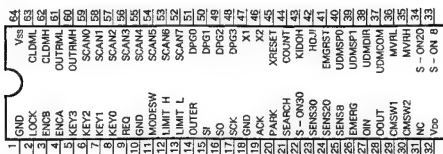


Fig 8

10.2 PD4360C (IC114) CHANGER MECHANISM MICROPROCESSOR

● Pin Connection Diagram



● Pin Function Table

Pin No.	Pin Name	I/O	Pin Function
1	—	I	GND connection
2	LOCK	I	Outer tray LOCK SW input
3	ENCB	I	Elevation count encoder sensor B input
4	ENCA	I	Elevation count encoder sensor A input
5	KEY3	I	For checks during manufacture
6	KEY2	I	For checks
7	KEY1	I	For checks
8	KEY0	I	For checks
9	REQ	I	Communication request input from system controller
10	—	I	GND connection
11	MODESW	I	Manual mode discrimination input for checks
12	LIMIT H	I	Elevation upper limit SW input (TOP)
13	LIMIT L	I	Elevation lower limit SW input (BOTTOM)
14	OUTER	I	Elevation count check sensor input
15	SI	I	System controller communication serial data input
16	SO	O	System controller communication serial data output
17	SCK	I	System controller communication serial clock input
18	—	I	GND connection
19	ACK	O	Communication ACK output to system controller
20	PARK	O	Mode display indicator (park)
21	SEARCH	O	Mode display indicator (search)
22	S-ON30	O	Disc sensor emitting output (30 cm)
23	SENS30	I	Disc sensor sensing input (30 cm)
24	SENS20	I	Disc sensor sensing input (20 cm)
25	SENS8	I	Disc sensor sensing input (8 cm)

Pin No.	Pin Name	I/O	Pin Function
26	EMERG	I	Elevation motor over current detection input
27	OIN	I	Outer tray IN SW input
28	OOUT	I	Outer tray OUT SW input
29	CMSW1	I	Carrier base SW1 input (elevation possible)
30	CMSW2	I	Carrier base SW2 input (tray exists)
31	N.C.	—	—
32	VDD	—	Power supply +5V
33	S — ON8	O	Disc sensor emitting output (8 cm)
34	S — ON20	O	Disc sensor emitting output (20 cm)
35	MVR H	O	Main volume H output
36	MVR L	O	Main volume L output
37	UDMCOM	O	Elevation motor ON/OFF output
38	UDMDIR	O	Elevation motor up/down direction output (UP/DOWN)
39	UDMSP1	O	Elevation motor speed 1 output
40	UDMSP0	O	Elevation motor speed 0 output
41	EMGRST	O	Elevation motor over current circuit reset output
42	HOJI	O	Outer tray lock release mechanism hold output
43	KIDOH	O	Outer tray lock release mechanism start up output
44	COUNT	O	Mechanism check/main loop output
45	XRESET	I	Microprocessor reset input from system controller
46	X2	—	Microprocessor clock input 4.194304 MHz
47	X1		
48	DPG3	O	For checks during manufacture
49	DPG2	O	For checks
50	DPG1	O	For checks
51	DPG0	O	For checks
52	SCAN7	O	For checks
53	SCAN6	O	For checks
54	SCAN5	O	For checks
55	SCAN4	O	For checks
56	SCAN3	O	For checks
57	SCAN2	O	For checks
58	SCAN1	O	For checks
59	SCAN0	O	For checks
60	OUTRMH	O	Outer tray motor H output
61	OUTRML	O	Outer tray motor L output
62	CLDMH	O	Carrier base tray closing motor H output
63	CLDML	O	Carrier base tray closing motor L output
64	VSS	—	Power supply GND

The timing for executing the program of this microprocessor can be monitored at Pin 44 (COUNT).

"L" is output when the program is being executed and "H" during communication or program standby.

In addition, the PARK-LED (green) and SEARCH-LED (orange) on the CMEC unit are points at which the execution of this microprocessor can be monitored.

These two points blink according to mechanism operations carried out by commands.

- When initializing is not carried out (when the position is not fixed), both "green" and "orange" LEDs light up.
- When the operation mode is not set after initializing, only the "green" LED lights up.
- When the operation mode has been set and mechanism operations are carried out, only the "orange" LED lights up.

In addition, the EMERG-LED (red) on the CMEC unit lights up when over current has been detected out during elevation operations of the carrier base.

● Timing of tray closing operations on the carrier base

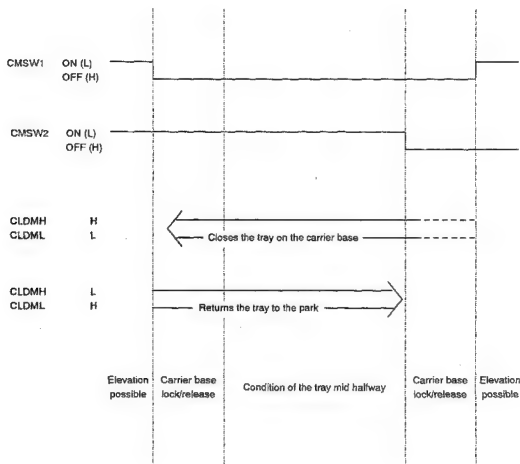


Fig 9

● COUNT TIMING DURING CARRIER BASE ELEVATION AND PIN INPUTS TIMING CHART OF ENCA, ENCB, OUTER (Parity check)

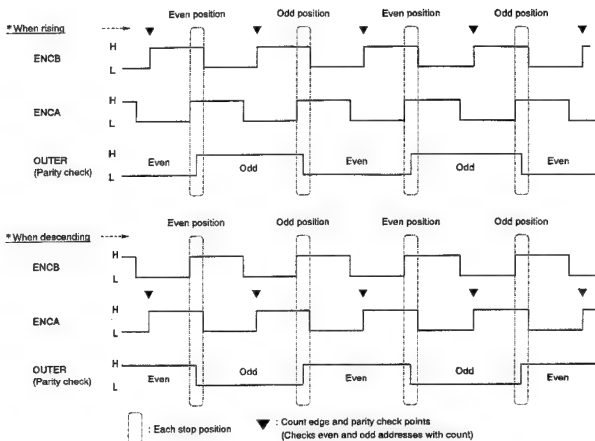


Fig 10

● Elevation initial speed setting and deceleration setting when carrier base is elevating (during search)

Elevation speed	UDM SP1	UDM SP0	Setting Speed
4th speed (VERY FAST)	1	1	128.4mm/sec
3rd speed (FAST)	1	0	83.4mm/sec
2nd speed (SLOW)	0	1	82.7mm/sec
1st speed (VERY SLOW)	0	0	28.8mm/sec

● Elevation initial speed setting

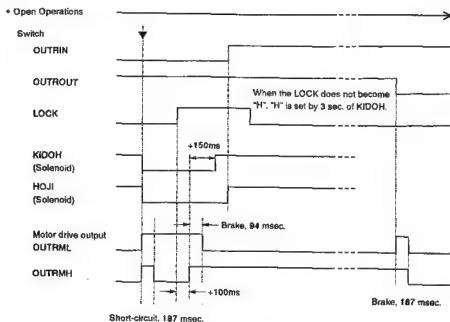
Difference from target address	Setting elevation speed
Above 16	4th speed
12 to 15	3rd speed
6 to 11	2nd speed
Below 5	1st speed

● Deceleration Setting

Difference from target address	Setting elevation speed
7 to 12	3rd speed
4 to 6	2nd speed
Below 3	1st speed

(* No acceleration)

● Outer Tray Open/Close Timing (1)



Close operations are carried out for a fixed period of time so that the tray can be unlocked easily.

Fig 11

● Outer Tray Open/Close Timing (2)

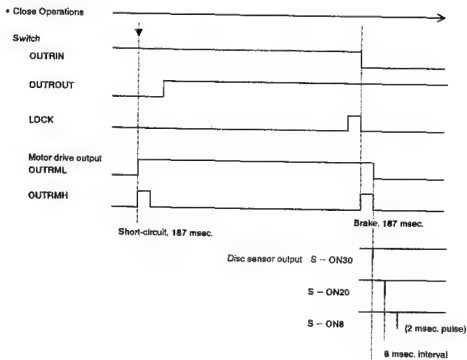
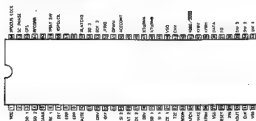


Fig 12

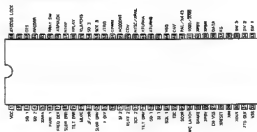
10.3 PD0162A1(IC751/FTSB unit):LC-V100/SEM, PD0114B1(IC101/VDEM unit):LC-V200/KUC PLAYER SERVO MECHANISM MICRO PROCESSOR

● Pin Connection Diagram

● LC-V200/KUC type



● LC-V100/SEM type



● Pin Function Table (LC-V200, LC-V100)

Pin No.	Pin Name	Function
1	VCC	Power supply connection pin.
2	N.C.	—
3	SQ1	Analog audio switching signal output pin, 1/L. Squelch H. During digital audio, performed by EFM decoder IC: CXD2500AQ control.
4	SQ2	Analog audio switching signal output pin, 2/R. Squelch: H.
5	XANA	Digital/analog audio switching signal output pin. "H"=Digital, "L"=Analog. Signals output to the LINE OUT are switched by this signal.
6	PARK 1	Pickup position detection switch input pin (analog signal). Divides the resistance of each switch, reads the values of the A/D input and detects the position.
7	FREQ DET	RF detection signal input pin (analog signal). Voltage and frequency are proportionate. A/D — inputs the RF detection output to use for the spindle rough servo.
8	SLDR ERR	Slider error signal input pin (analog signal). A/D-converts this signal and takes it as the control input of the slider servo.
9	TILT ERR	Tilt sensor output signal input pin (analog signal). A/D — converts this signal and takes it as the control input of the tilt servo. Controls the tilt motor so that this signal becomes 2.5V.
10	MUTE	Audio system audio mute control signal output pin, "H"=MUTE ON, "L"=MUTE OFF.
11	N.C.	—
11	* J F/XR	JUMP FWD signal output pin for PAL.
12	SLDR DRV	Slider control signal output pin. Period 910 μ sec. Tertiary control H, L, Z. PWM-outputs the slider drive to use for the slider servo.
13	T OFF	Tracking operation control signal output pin. "H"=OFF, "L"=ON. Backups the ON/OFF of the tracking servo operation with this signal.
14	N.C.	—
15	SI2	EFM decoder CXD2500AQ sub code input pin. Reads the sub codes with SCK2 and this signal.
16	XLAT2	EFM decoder CXD2500AQ control latch signal output pin. Transmits the control command using SCK3 of the EFM decoder IC.
17	SCK2	EFM decoder CXD2500AQ sub code reading clock signal output pin. Outputs the 96 clocks to read the sub codes.
18	TILT DRV	Tilt control signal output pin. PWM-outputs the tilt drive to use for the tilt servo.
19	SO1	Data input pin from the system controller IC. Serial front to mechanism.
20	SI1	Serial data output to the system controller. Serial mechanism to front.
21	SCK1	Serial communication clock with system controller. Becomes the input mode when not communicating with the system controller.
22	TZC	Tracking error zero cross signal input pin. Signal which compares the tracking error signal. During track count search, counts this signal and controls the slider motor.
23	SCOR	Sub code sync signal input pin. Inputs the sub code signal from the EFM decoder IC: CXD2500AQ when this signal is "H". Also monitors the playback condition of the disc according to the presence/absence of this signal.
24	NPC LATCH	Not used.
25	SHAKE	Handshake signal pin for data communication with the system controller IC. This pin is a two way data line and transmits the data transmission timing by switching the output/input mode with the respective microprocessors.
26	XPBV	LD/CDV playback vertical sync signal input pin. This IC basically operates by synchronizing with this signal. (falling edge)
27	CN VSS	A/D conversion GND
28	XRESET	Reset signal input pin, "L"=Reset, "H"=Reset release. Controlled by the system controller.

Pin No.	Pin Name	Function
29	XIN	9 MHz clock oscillating input pin
30	XOUT	9 MHz clock oscillating output pin
31	FTS CLK	Φ external clock output pin 2.25 MHz. Outputs the clock which is the master clock (9 MHz) divided into four for FTS IC:PM3003. Does not output if FTS ICs other than the PM3003 are used.
32	VSS	GND
33	SW1	Switch input pin for loading/tilt position detection
34	SW2	Switch input pin for loading/tilt position detection
35	SW3	Switch input pin for loading/tilt position detection
36	—	Not used. Grounded as it is only for input.
37	FG	Spindle motor FG signal input pin. 24 clocks in one rotation. Frequency divided into three inside the microprocessor and used.
38	DATA	Input pin for Phillips code decoder with built-in mechanism controller
39	XPBH	For playback H-SYNC input Phillips code decoding
40	XPBV	For playback V-SYNC input Phillips code decoding
41	1080/2090	One side/both sides play switching signal pin, Grounded.
42	N.C.	—
	* PAL/X4.43	PAL/4.43 NTSC switching output pin.
43	CAV	CAV/CLV switching signal output pin, "H":CAV, "L":CLV Connected to Pin 6 of PA5013, and used as a video NR switching signal
44	VSQ	Switching signal output pin of video output, "H":Squeich, "L":Playback video
45	N.C.	—
46	XTURNB	α turn position detection signal input pin, "L":Side B, "H":Side A, during turn
47	XTURN A	α turn position detection signal input pin, "L":Side A, "H":Side B, during turn
48	N.C.	—
	* NTSC/XPAL	PAL/NTSC signal output pin, L:PAL, H:NTSC.
49	N.C.	—
	* CDV	CDV control pin. Not used.
50	ACC CONT	Spindle acceleration/deceleration signal output pin. H=Acceleration, L=Deceleration, Z=CD, stop, play
51	GPWM	Duty pulse signal output pin for spindle gain switching. CLV inner circumference:L, External circumference:H, CAV:L, CDV:H
52	J TRIG	Track jump signal output pin. Width of "H": Approximately 20 μ sec. For 1 track jump, Beginning of jump:H, Others:L
53	SCK3	Serial 3 clock signal output pin. Rising edge reading. "H" period 2 μ sec., "L" period 20 μ sec.
54	SO3	Serial 3 data signal output pin, LSB first.
55	XLATCH3	Latch signal output pin for spindle servo IC
56	N.C.	—
	* XPLAY	Play signal output pin for PAL, L:Play, H:not play.
57	N.C.	—
	* NtoP	Conversion control pin from NTSC to PAL.
58	XSPDLCK	Spindle lock signal input pin, LockL, UnlockH
59	TRAY SW	CD direct tray position detection switch input pin, Grounded.
60	N.C.	—
61	RFCORR	RF correction switching signal output pin, H=Gain up. Increases gain at CAV inner circumference, #8000, #8100
62	GFS	CD (EFM signal) frame lock signal input pin. Connected to Pin 12 of EFM decoder IC CXD2500AQ. "H":Lock, "L":Unlock. GFS means the good frame sync.
63	SC PHASE	Trick play pin when PAL, Not used, Pull - up. (LC-V200)
	N.C.	—
64	XFOCUS LOCK	Focus servo lock signal input pin. Used for lock detection of focus servo. "L":Lock, "H":Unlock

* LC-V100/SEM Type.

● Loading/Tilt Position (Descriptions of Pins SW1, SW2, SW3)




SW3								
SW2								
SW1								
HEX	6	4	5	1	0	2	3	7
DECODE	0	1	2	3	5	7	8	9
MODE	OPEN	LOADING	STANDBY	CLAMP	TILT-	TILT+	LIMIT	B CLAMP

Fig 13

● Slider Position (Descriptions of the PARK1, XTURNA pin)

	CD Inside	CD Active	CDV Active	LD Active	B Side Inside
XTURNA	ON	ON	ON	ON	OFF
PARK1 SW	ON	OFF	OFF	OFF	ON
PARK2 SW	ON	ON	OFF	OFF	OFF
PARK3 SW	ON	ON	ON	OFF	OFF
SLD POS.	0	3.1	3.8	5	0

Fig 14

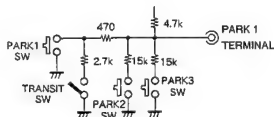


Fig 15

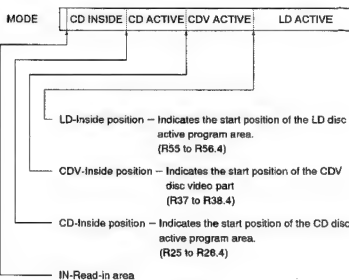


Fig 16

11. PANEL FACILITIES

Front Panel

STANDBY/ON switch/indicator

Press this switch to turn the power on or off. Also, you can enter the AutoChanger address setting mode or disc replacement mode by pressing the STANDBY/ON switch while holding down a digit button or the OPEN/CLOSE button while the power supply is switched off.

Indicator

Displays shows the disc number while a disc is being replaced. If an error occurs, the indicator displays the error code.

ERR (error) indicator

This indicator blinks when an error occurs.

Digit buttons

Specify the disc number to be replaced by using the digit buttons in the disc replacement mode.

OPEN/CLOSE button

Opens/closes the changer tray or the standard tray when replacing a disc.

The buttons/switches inside the sealing panel are used when loading or exchanging discs in the tray, or when entering a new address for an AutoChanger.

[How to open the door]

- ① To unlock the door, insert the supplied key and turn it 90 degrees counterclockwise.
- ② Press the door to open it.
- ③ To lock the door, shut it and then insert the key and turn it 90 degrees clockwise.

To remove the door.



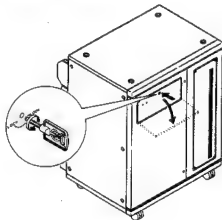
Press in with your fingertips at the left and right hook sections and then slowly pull the door towards you.

To install the door.

Press the hook sections with your fingertips as explained in the removal step. Then slowly push the door into position.



Insert the boss of the hook into this hole.



● LC-V200/KUC type

Rear Panel

INTERFACE CONNECTOR IN terminal (9-pin D-sub connector)

Connect to the AutoChanger control of the CO-V200 (use the supplied interface connector cable).

INTERFACE CONNECTOR OUT terminal (9-pin D-sub connector)

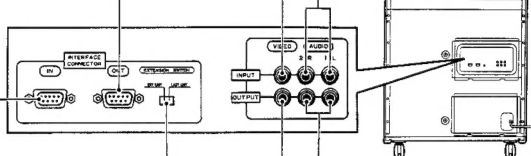
Connect to the INTERFACE CONNECTOR IN terminal of an additional AutoChanger. A maximum of four AutoChangers can be connected.

VIDEO INPUT terminal (RCA jack)

Connect to the VIDEO OUTPUT terminal of an additional AutoChanger.

AUDIO INPUT terminal (RCA jack)

Connect to the AUDIO OUTPUT terminal of an additional AutoChanger.



EXTENSION SWITCH

Use this switch when installing additional AutoChangers. If this unit is the last unit, shift the EXTENSION SWITCH to "LAST UNIT". If another unit is further connected for the extension, shift the EXTENSION SWITCH to "EXT. UNIT".

AUDIO OUTPUT terminal (RCA jack)

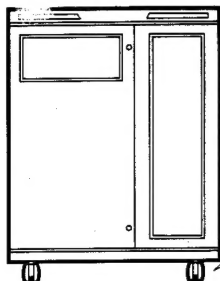
Connect to the AutoChanger AUDIO INPUT of the CO-V200 (use the supplied audio cable).

VIDEO OUTPUT terminal (RCA jack)

Connect to the AutoChanger VIDEO INPUT of the CO-V200 (use the supplied video cable).

CASTER LOCK

The front casters are provided with a locking mechanism. Lock as shown in the diagram.



Lock

① The lock will be released when the claw is pushed up.

② The lock will be secured when the claw is pushed down.



If it is difficult to lock, turn the caster slightly.

● LC-V100/SEM type

Rear Panel

**INTERFACE CONNECTOR IN terminal
(9-pin D-sub connector)**

Connect to the AutoChanger control of the CO-V100 (use the supplied interface connector cable).

**INTERFACE CONNECTOR OUT terminal
(9-pin D-sub connector)**

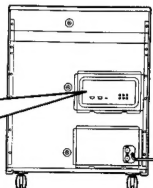
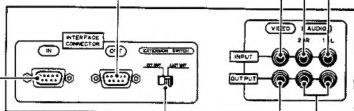
Connect to the INTERFACE CONNECTOR IN terminal of an additional AutoChanger. A maximum of four AutoChangers can be connected.

VIDEO INPUT terminal (RCA jack)

Connect to the VIDEO OUTPUT terminal of an additional AutoChanger.

AUDIO INPUT terminal (RCA jack)

Connect to the AUDIO OUTPUT terminal of an additional AutoChanger.

**EXTENSION SWITCH**

Use this switch when installing additional AutoChangers. If this unit is the last unit, shift the EXTENSION SWITCH to "LAST UNIT". If another unit is further connected for the extension, shift the EXTENSION SWITCH to "EXT. UNIT".

AUDIO OUTPUT terminal (RCA jack)

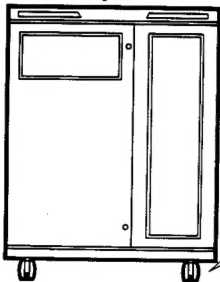
Connect to the AutoChanger AUDIO INPUT of the CO-V100 (use the supplied audio cable).

VIDEO OUTPUT terminal (RCA jack)

Connect to the AutoChanger VIDEO INPUT of the CO-V100 (use the supplied video cable).

CASTER LOCK

The front casters are provided with a locking mechanism. Lock as shown in the diagram.

**Lock**

① The lock will be released when the claw is pushed up.

② The lock will be secured when the claw is pushed down.



If it is difficult to lock, turn the caster slightly.

12. SPECIFICATIONS

● LC-V200/KUC type

1. General

System	... LaserDisc system and Compact Disc digital audio system
Laser	... Semiconductor laser wavelength 780 nm
Power requirements	... AC 120 V, 50/60 Hz
Power consumption	... 160 W
Weight (without package)	... 93 kg (205 lbs)
Dimensions	... 702 (W) x 593 (D) x 896 (H) mm 27-5/8 (W) x 23-3/8 (D) x 35-1/4 (H) in
Operating temperature	... +5°C to 35°C (41°F to 95°F)
Operating humidity	... 5% to 85% (no condensation)

2. Disc

LaserDiscs

* Maximum playing times	
12-inch standard play disc	... 1 hour/both sides
12-inch extended play disc	... 2 hour/both sides
8-inch standard play disc	... 28 min/both sides
	14 min/one side
8-inch extended play disc	... 40 min/both sides
	20 min/one side

Spindle motor speed *

Standard play disc	... 1,800 rpm
Extended play disc	... 1,800 rpm (inner circumference) to 600 rpm (outer circumference) (For a 12-inch disc)

Compact Discs

DISC	... Diameter: 5 inches, 3 inches
Thickness: 1.2 mm	
Rotation direction (pickup side)	... Counterclockwise
Liner speed	... 1.2 to 1.4 m/sec
* Maximum playing times	... 74 min, 5-inch discs 20 min, 3-inch discs (For stereo playback)

NOTE:

Playback of 3-inch discs can only be performed when using the standard tray.

Compact Disc with Video

DISC	... Diameter: 5 inches, Thickness: 1.2 mm
Rotation direction (pickup side)	... Counterclockwise
Liner speed	... Audio portion: 1.2 to 1.4 m/sec Video portion: 11 to 12 m/sec
* Maximum playing times	... Audio portion: 20 min (digital) Video portion: 5 min (CLV)

* Actual playback time differs for each disc.

3. Video characteristics

Format	... NTSC specifications
Video output	
Level	... 1 Vp-p nominal, sync. negative, terminated
Impedance	... 75 Ω unbalanced
Jack	... RCA jack

4. Audio characteristics

Output level	
During analog audio output	... 500 mVrms (1 kHz, 100%)
During digital audio output	... 2 Vrms (1 kHz, 0 dB)
Jacks	... Both RCA jacks
Number of channels	... 2

5. Other terminals

Interface connector terminal	... 9-pin D-SUB connector
------------------------------	---------------------------

6. Functions


Disc capacity	... Max. 50
CX noise reduction	... Automatic switching

7. Accessories

Video cable	... 1
Audio cable	... 1
Door key	... 2
Control cable	... 1
Operating instructions	... 1

NOTE:

The specifications and design of this product are subject to change without notice, due to improvement.

 is a trademark of CBS Inc.
This autochanger meets the CX EXPANDING SPECIFICATION.

● LC-V100/SEM type

1. General

System

... LaserDisc system and Compact Disc digital audio system

Laser ... Semiconductor laser wavelength 780 nm

Power requirements

... AC 110 V/120 V/220 - 230 V/240 V (Switchable), 50/60 Hz

Power consumption ... 160 W

Weight (without package) ... 93 kg

Dimensions ... 702 (W) x 593 (D) x 896 (H) mm

Operating temperature ... +5°C to 35°C Operating humidity ... 5% to 85% (no condensation)

2. Disc

LaserDiscs

PAL disc

* Maximum playing times

30 cm active play disc ... 72 min/both sides

30 cm long play disc ... 2 hour/both sides

20 cm active play disc ... 28 min/both sides

14 min/one side

20 cm long play disc ... 40 min/both sides

20 min/one side

Spindle motor speed

Active play disc ... 1,500 rpm

Long play disc ... 1,500 rpm (inner circumference)

to 570 rpm (outer circumference)

(For a 30 cm disc)

NTSC disc

* Maximum playing times

30 cm standard play disc ... 1 hour/both sides

30 cm extended play disc ... 2 hour/both sides

20 cm standard play disc ... 28 min/both sides

14 min/one side

20 cm extended play disc ... 40 min/both sides

20 min/one side

Spindle motor speed

Standard play disc ... 1,800 rpm

Extended play disc ... 1,800 rpm (inner circumference)

to 600 rpm (outer circumference)

(For a 30 cm disc)

Compact Discs

DISC ... Diameter: 12 cm, 8 cm

Thickness: 1.2 mm

Rotation direction (pickup side) ... Counterclockwise

Liner speed ... 1.2 to 1.4 m/sec

* Maximum playing times ... 74 min, 12 cm discs

20 min, 8 cm discs

(For stereo playback)

NOTE:

Playback of 8 cm discs can only be performed when using the standard tray.

Compact Disc with Video

DISC ... Diameter: 12 cm, Thickness: 1.2 mm

Rotation direction (pickup side) ... Counterclockwise

Liner speed ... Audio portion: 1.2 to 1.4 m/sec

Video portion: 11 to 12 m/sec

* Maximum playing times

Audio portion: 20 min (digital)

Video portion: 5 min (CLV)

* Actual playback time differs for each disc.

3. Video characteristics

Format ... PAL/NTSC specifications

Video output

Level ... 1 Vp-p nominal, sync. negative, terminated

Impedance ... 75 Ω unbalanced

Jack ... RCA jack

4. Audio characteristics

Output level

During analog audio output ... 500 mVrms

(1 kHz, 100%)

During digital audio output ... 2 Vrms

(1 kHz, 0 dB)

Jacks ... Both RCA jacks

Number of channels ... 2

5. Other terminals

Interface connector terminal ... 9-pin D-SUB connector

6. Functions

Disc capacity ... Max. 50

CX noise reduction ... Automatic switching

7. Accessories

Video cable ... 1

Audio cable ... 1

Door key ... 2

Control cable ... 1

Operating instructions ... 1

NOTE:

The specifications and design of this product are subject to change without notice, due to improvement.



is a trademark of CBS Inc.

This autochanger meets the CX EXPANDING SPECIFICATION.